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TWENTY-SIXTH ANNUAL REPORT

RELATING TO THE

REGISTRY AND RETURN

OF

BIRTHS, MARRIAGES AND DEATHS

IN

MICHIGAN

FOR THE YEAR 1892

BY THE SECRETARY OF STATE OF THE STATE OF MICHIGAN



BY AUTHORITY

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tion, if worth doing at all, and from its sanitary, social and legal applications it is unquestionably an important and necessary function of the State, is worth doing well. Money spent for imperfect and incorrect returns is largely wasted; money expended upon a reliable system of vital statistics will bear abundant interest in sanitary and social improvement. Michigan was once a leader in this department, and with a little timely effort can recover her former position as the foremost of the Western States in this fundamental branch of public health service.

The present report has been so arranged for convenient reference, with a list of tables showing their contents (p. xv), a full index, summaries at the beginning of each important division, and maps and diagrams prepared to illustrate some of the most important facts, that any special remarks in regard to the statistical features of the year appear to be unnecessary at this place. Trusting that the labor expended upon its preparation may be of use in conveying clear and correct ideas of the results obtained by the present law, I have the honor to be,

Yours very respectfully,

WASHINGTON GARDNER,

Secretary of State.

INTRODUCTORY REMARKS.

This report, like the one for the preceding year, appears several months later than has been customary for the past few years. The reason for the necessary delay in each case has been the large amount of additional labor that it has been necessary to perform in their preparation in order to bring them somewhat more into conformity with modern methods of statistical presentation. Thus, in the previous report, a series of estimated populations was introduced, whereby the general results of the registration of births, marriages and deaths, and also the results of the registration of deaths from specified causes in different years, became for the first time comparable. Some of the valuable results relating to the variations of certain diseases thus obtained have been diagramed by the State Board of Health, and are presented, by the courtesy of Secretary Baker, as Diagrams III–VIII of this report.

In the present report, besides the continuation of the comparative study of the statistics of previous years begun in the last report, special pains have been taken to present the important facts relating to the registration of causes of death in a more compact and accessible form than heretofore. The antiquated statistical classification of Dr. Farr has been discarded and a form of statement giving prominence to important diseases, definitely returned, and especially those infectious diseases in process of restriction by the public health service of the State, has been adopted provisionally until an accredited modern system of nomenclature and classification shall be officially adopted by the leading registration reports of this country. How far these efforts have been successful may be determined by inspection of Tables 69 and 70, which present, in the compass of twelve pages, the most essential facts of tables that formerly occupied about sixty pages. Moreover, the risk of error in reference to these tables has been removed by using terms in only one signification, instead of confusing them in different tables of the same report.

An additional part,—that exhibiting the facts obtainable in regard to

vital statistics and the registration thereof in the cities of Michigan,—has been added to the present report, and is regarded as of great importance. The first reliable death-rates from all causes and from certain important diseases that have ever been presented in these reports for any considerable portion of the State are here stated. They are obtained from the monthly bulletins showing the results of the immediate registration of deaths under local ordinances in the cities of Detroit and Grand Rapids. Even if no improved general registration law for the State be enacted, it would be easy to provide for the return of the deaths registered by city authorities to the State Department, and thus inaugurate a more accurate system of registration. The provisions of charters and ordinances relating to registration of vital statistices have been carefully studied, and the results will not only prove valuable for reference but will also strongly suggest the desirability of uniformity in such provisions for all the cities of the State, and also of provisions requiring returns to be made to the State Department by which the statistical results of such registration may be utilized.

DEFECTS OF THE PRESENT SYSTEM OF REGISTRATION.

The particulars in which our present registration law, which has remained unchanged since 1869, and which has long been recognized as a failure in carrying out the purposes for which it was devised, are deficient were fully stated in the Introductory Remarks of the last report, and need not be referred to here except in brief recapitulation:

1. The method of enumeration of births and deaths by supervisors and assessors after the close of the year in which the births and deaths occurred (the census method) is a recognized failure for vital statistics. For the same reasons, neglect, forgetfulness, etc., that an ordinary census enumeration of births and deaths is imperfect, the registration returns are imperfect, and probably to a slightly greater degree from cases of individual neglect on the part of supervisors.

2. The registration returns are even less perfect than the imperfect census enumeration of births and deaths because there is a loss of time at the outset, before the enumeration begins, amounting to three or four months. The enumeration takes place each year from April 10 to June 1 for the births and deaths of the calendar year preceding. Probably most of the actual work is performed in May, four months after the close of the registration year. The census enumeration taken in June is for the year ending June 1, immediately preceding.

3. As a result of the imperfect methods of collection of these data, probably not more than 60 per cent of the true numbers of births and deaths

that actually occur are properly returned and placed upon record. That is, two births and deaths out of every five that occur, are omitted.

4. As a consequence of these omissions, the value of the records for legal purposes is greatly diminished. Requests for certified copies of the records of births and deaths that, undoubtedly, actually occurred in the State reach this Department, but in many such cases there no records preserved of the same. The serious effect that such lapses of evidence would have in support of legal claims, especially cases of inheritance in foreign countries where proofs of birth or death are required, pension cases and the like, is apparent. The State owes it to each citizen to preserve an accurate and trustworthy record of these vital facts, the absence of whose preservation may mean individual embarrassment and loss.

5. As a consequence of these omissions, the value of the records for statistical purposes is greatly impaired, and is even, in some of the most important respects, entirely destroyed.

6. Thus, no reliable birth-rates or death-rates for the entire State or for even a single county of the State have ever been presented in these reports. The rates based upon the returns are so low as to be self-evidently worthless to anyone desiring to employ them in comparisons with the rates of other States or countries. They meet with no acceptance by statistical experts,—Michigan was not even included in the list of "Registration States" according to the mortality reports of the last United States census,—and their sole value appears to be for comparison with other, and presumably equally defective, returns for previous years in Michigan.

7. Again, the distribution of the births and deaths that are reported among the months and seasons of the year is misleading. The returns are more perfect for the latter months of the calendar year, which are nearer to the time of enumeration in May, than for the early months of the year. In consequence of this irregular distribution any exact comparison of deaths returned from different diseases, by months, and the meteorological conditions prevailing in the same months, becomes impracticable. Even the relative importance of different diseases as causes of deaths in this State cannot be correctly known, for some are more fully reported than others according to their seasons of prevalence.

8. Causes of deaths have never been fully and correctly reported under the present system, nor can they be until a physician's certificate is required in each case. There is a large percentage of deaths reported each year in which the cause of death is entirely unspecified or given as "unknown." A great many more are returned in a way that really gives no precise information as to the causes of death, although the supervisors who made the original returns probably considered them sufficiently definite. Su

are "heart failure," "debility," "old age," "convulsions," "dropsy" (rejected as a cause of death without more definite statement by the New York health authorities as far back as 1870), "fever" (unspecified as to its nature), etc., etc. The supervisors cannot be expected to possess medical information sufficient to enable them to discriminate when imperfect information is given them under this head, and in consequence no reliable information will ever be collected by them in regard to causes of death.

9. Knowledge of the geographical distribution of deaths from certain causes, *e. g.*, consumption, diphtheria and typhoid fever, in different localities of the State may be of the greatest practical importance and interest. Two maps are inserted in this report showing, by graduated degrees of shading, what the relative degrees of prevalence of consumption and diphtheria (including croup) were for every county in the State during the five-year period, 1888-92. But it must be frankly admitted that the returns of deaths are more perfect in some counties than in others, and that those counties that make the most thorough reports may have an apparently higher mortality than other counties in which the supervisors' work is very lax, thus unjustly representing their true relations.

10. Lastly, and most important of all in many respects, the collection and return of the statistics are so delayed that when they are finally received and compiled they have ceased to be of any public interest and practical sanitary importance except for purposes of comparison. The returns on which this report for the year 1892 are based did not reach this Department until nearly the end of 1893, and then the entire bulk of returns for the year had to be compiled in one mass. As the editorial work cannot be performed satisfactorily until the final results of the compilation are known, and as the editorial commentary of itself, unless restricted to the mere repeating of stereotyped remarks, requires careful study, it is evident that the earliest possible time in which the registration report can appear is about the middle of the second year after the year of registration.

ESSENTIALS OF AN IMPROVED REGISTRATION SYSTEM.

There can be little question as to the general character of the methods to be employed in order to obtain satisfactory results in registration, although the details of the system to be adopted in this State may be a matter of wide choice. There are already in this country—in all of the New England States, New York and New Jersey—systems of registration in operation under which fairly satisfactory results are obtained. Practical observation in these States has settled the advantages or disadvantages of certain methods of procedure, and it is only necessary to profit by such

experience in order to devise a plan for Michigan that shall be in no sense an experiment, but of demonstrated practicability from its inception.

Certain especially important features that any modern system of registration should possess are the following:

1. The method of collection of data regarding births and deaths should be by *immediate registration*, and not by any plan of enumeration at a subsequent period. The births and deaths should be recorded by a local registrar—health officer, city clerk or clerk of city board of health, township or village clerk, or other suitable official—at the earliest practicable moment after their occurrence. The facts are then fresh in memory and greater accuracy is assured in all of the statistical details, while this is the only way in which it can be sure that all such occurrences are registered.

2. The local registrar should receive adequate compensation for his work and be subject to suitable penalties for neglect or fraud in its conduct. He should issue permits for the interment, transportation or other disposition of the bodies of all persons who die within his jurisdiction. Such permits should be issued only after the presentation of a certificate of death containing (1) the essential facts of record properly certified to by a qualified person, and (2) the statement of the cause of death certified to by the physician last in attendance, health officer or coroner. It should be made punishable by law to inter or assist in the interment or other disposition of the body of any person dying in this State without the sanction of such duly authorized burial permit. In sparsely settled localities, where the local registration office may not be readily accessible, certain forms of emergency procedure can be devised in order to obviate any possible hardship.

Births should be made returnable by physicians, midwives or parents within a short time after their occurrence, and under suitable penalties in case of neglect.

3. Arrangements should be made for the prompt transmission of the returns by the local registrars to the central registration office. Reports should be made at least monthly, and, for the larger cities, it might be advisable that they should be made at more frequent intervals. Prompt monthly or weekly reports would enable the health condition of the State to be known at the time when such knowledge would be of practical value. Public interest in the variations of mortality would be aroused, efforts be made to reduce the mortality when the registration returns showed that it was abnormally large for special localities, and an intelligent public opinion be cultivated in regard to the sanitary condition of the State. It is very desirable in this connection, as regards the registration of deaths, that the original certificates of death be transmitted to the central registration

office, there to be compiled under medical supervision. It is only by having the entire course of registration, so far as it relates to the proper return and compilation of causes of death, under professional control, that satisfactory statistics will be presented upon this very important subject.

As shown in Part V of this report, these principles are already practically observed in the local systems of registration adopted in many of the cities of the State, and under which, as shown by the comparative data presented for Detroit and Grand Rapids as obtained by the State and local systems of registration for the same years, the results are much more correct than those given by the State registration. It would only be necessary to provide for uniformity in the data collected by the local municipal authorities, and for the proper return of such data to the central registration office for the purpose of compilation, in order to establish a useful and satisfactory system of vital statistics for a large proportion of the population of the State. According to the census of 1894 the total population of the State was 2,241,914 persons, of whom 821,107, or about 37 per cent., were inhabitants of incorporated cities. A thoroughly correct and reliable system of registration of vital statistics for so large a proportion of the population would be of great practical value, and would pave the way for the ultimate extension of an approved system of immediate registration over the entire State.

On the other hand it may be preferable for some reasons to adopt a new registration law for the entire State at once, applicable to rural communities as well as to cities and villages. Taking into consideration the present condition of the State in regard to wealth and density of population, this course would probably be perfectly practicable. Indeed, an improved and thoroughly modern and efficient system would be a less serious undertaking for the State at the present time than the adoption of the present system was in 1867. Since that time the average density of population of the State has nearly doubled, and its resources and means of internal communication have been very largely increased. Should a uniform system be put into operation for the entire State, no variations in proportions and character of population represented would have to be considered in subsequent years, but a broad, substantial foundation adequate for the future demands of the State would be provided, and progress in the statistical study of vital conditions in Michigan would be uninterrupted from this point.

These questions of expediency are properly the subject of legislative consideration. It belongs to this Department to thoroughly display the results obtained under the present system, and to respectfully ask consideration of their more obvious deficiencies with a view to the application of

such remedies as may be considered proper. The improvement of our registration law is a matter that this Department, which is charged with its administration and statistical study, has deeply at heart, and for which end it is eager to coöperate with all persons desirous of improving such conditions. It is gratifying to note in this connection that the State Medical Society, to whose early interest in the vital statistics of the State and promotion of legislative action in regard thereto, is chiefly due our present registration system, appointed a committee at its last session (Lansing, 1894), for the purpose of petitioning the legislature with reference to the adoption of a better system of registering births and deaths.

It is also probable that the State Board of Health, whose valuable sanitary work in Michigan has been oftentimes seriously handicapped by the absence of a thoroughly reliable mortality registration in this State, will appoint a committee to coöperate with the committee of the State Society. Much may be hoped for from the efforts of these committees which represent the most advanced medical opinion in the State, and the prospect seems favorable in every way for Michigan to regain the position she once occupied in vital registration as the pioneer and leading representative of State registration among the Western States.

INTERSTATE AND INTERNATIONAL VITAL STATISTICS.

Vital statistics is essentially a comparative science. The data collected by a State are put to their best use when they are so arranged that comparisons may be readily and accurately made with the corresponding data collected by other States and countries. This, indeed, was one of the prime objects for which our State system of registration was instituted, as appears by the report of the committee on State Affairs to the legislature of 1867 prior to the passage of the registration law: "The statistics collected under an efficient registration law would be valuable, *First*:—Because from them could be accurately determined the relative standing of our State as to *health* compared with other States, and the comparative healthfulness of different portions of it." Our registration law has never been very efficient, and hence the comparative study of the statistics of Michigan collected under it and those of other States and countries is difficult and unsatisfactory. An effort has been made, however, in this report to carry out the purpose of the law to the fullest extent possible under present conditions. The results may be seen in Diagram IX, illustrating the variations in gross mortality of Michigan and certain other States and foreign countries during the years 1880–92, and also in various tables of comparative vital-rates (Tables 7 to 9 and 76 to 81).

In the preparation of the tables showing the death-rates of other States

from all causes and from some important diseases for the series of years included, ample illustration was found of the difficulties and inaccuracies resulting from varying methods of compilation and statement of vital results in use in different States. It would be a great step in advance if all the States of this country that issue registration reports could unite upon the essential details to be presented and the manner of their statement. At least, consecutive series of birth-rates, marriage-rates and death-rates should be presented for all the years of registration in each State, which rates should be based upon systematic estimates of population for each year. Tables should also show the number of deaths, and probably the death-rates, for the most important causes of death during each year of registration. Our only knowledge of the vital statistics of the country as a whole during inter-census years depends upon the comparative study of the several State registration reports, and any measures taken to render them readily comparable would greatly facilitate such study.

A union has been formed among the registrars of the six New England States (all now having excellent systems of State registration since the addition of Maine in 1892) for the presentation of the most important data of the six States as a whole. This is a most important step in advance, and looks toward the unification of the reports of these States in essential details. Could New York and New Jersey be added, we should have about one-fifth of the total population of this country uniformly represented in State registration reports. None of the Western States are included, however, and it is therefore especially incumbent upon us to bring the Michigan system to such a degree of efficiency that its results may meet with statistical acceptance, and contribute to the common knowledge of the vital statistics of the United States.

A very important feature relating to the comparability of the vital statistics reports of different States is the adoption of a uniform plan of statistical nomenclature and classification of causes of death. The condition of the different reports at present is chaotic, even those in which apparent agreement exists, so far as can be judged by the terms employed, really differing so much in essential details as to make comparisons very difficult and unreliable. The old system of nomenclature devised by Dr. Farr has held its place in recent years chiefly through indifference on the part of the registrars employing it, many of its terms having long been discredited by the advance of medical knowledge. While our chief efforts in this State at present are not properly directed toward matters relating to the proper presentation of vital statistics, but rather to the end that we shall have some reliable vital statistics to present in any form, it is evident that as soon as the State shall possess a reliable registration system the

question of nomenclature and arrangement of causes of death will be of importance. Some preliminary work has been done in the present report on this subject, and a *provisional* classification has been employed in the principal tables (Tables 69–71) which, it is believed, will render the facts more accessible and of greater practical use than heretofore.

The fact should be emphasized that Michigan or any other State cannot advantageously adopt a system of classification for permanent use without reference to those adopted by other States. At the meeting of the American Public Health Association, a representative body of sanitarians and public health officials from all the States and Provinces of the United States, Mexico and Canada, held at Montreal in September, 1894, a paper was presented by Dr. Wilbur on behalf of this Department showing the nature of the provisional system adopted in the Michigan reports, citing the objections (by permission of the Publication Committee, substantially as stated on pages 184 to 187 of this report) to the present classification, and urging that a representative body of State and municipal registrars meet in connection with the Association at its next meeting (Denver, 1895) for the purpose of taking action on this and other important subjects relating to registration. When a uniform, modern system of nomenclature and classification shall be recommended by a representative convention of American registrars, the system will be promptly adopted in these reports, which, it is sincerely hoped, will soon present, under an improved registration law, vital statistics more worthy of careful study than those obtained at present.

VITAL STATISTICS LIBRARY.

Some progress has been made during the past year in obtaining the nucleus of a working library on the subject of vital statistics. Exchanges have been begun with nearly all of the State registration offices of this country and with certain foreign offices, and in several instances complete, or nearly complete, sets of registration reports for previous years have been obtained. Several standard works on registration have also been added by purchase. Reference works are absolutely necessary for the study required in the proper issue of a registration report, and from their special character it cannot be expected that sufficient attention will be paid to their accumulation in a general library. By a little attention to the matter in this Department, continued from year to year, the library of works relating to vital statistics will grow into respectable proportions, and will furnish invaluable material for the work of the future compilers of these reports.

In pursuance of the above ideas, this report will be sent in some cases to registration offices with which at present we have no exchange, with the object of establishing one. It is especially desired to obtain the leading city registration reports of this country, and also to complete our sets of State registration reports and State board of health reports as far as possible. In return sets of the Michigan reports (incomplete for certain years) can be supplied, and correspondence is solicited upon this subject from persons interested.

For important accessions to the library during the past year, acknowledgments should be especially made to the following persons: Dr. George M. Sternberg, Surgeon-General U. S. A., for valuable volumes of the Index Catalogue of the Surgeon-General's Office; Dr. Samuel W. Abbott, Massachusetts, Dr. Lewis Balch, New York, Dr. J. Berrien Lindsley, Tennessee, Dr. Gardner T. Swarts, Rhode Island, Dr. C. A. Lindsley, Connecticut, Dr. A. G. Young, Maine, Dr. C. O. Probst, Ohio, Dr. Jerome Cochran, Alabama, Dr. C. W. Chancellor, Maryland, Dr. J. T. Reeve, Wisconsin, Dr. J. F. Kennedy, Iowa, and Dr. Joseph Y. Porter, Florida, Secretaries of State Boards of Health, for State board of health and registration reports of their respective States; Hon. James McMillan, United States Senator, for U. S. Census reports; Mrs. M. C. Spencer, State Librarian of Michigan, for duplicate copies of U. S. Census Mortality Statistics; Dr. Davis R. Dewey, Secretary of the American Statistical Association, for a nearly complete set of the Quarterly Publications; Hon. L. C. Storrs, Secretary of the Michigan State Board of Corrections and Charities and also of the National Conference of Charities and Corrections, for sets of reports of both organizations; and Surgeon-General Walter Wyman, U. S. M. H. S., for bound volumes of the Sanitary Reports.

The extensive collection of sanitary and statistical works belonging to the State Board of Health has been freely at the disposal of this Department for use in the preparation of this report, and facilities have been accorded in the State Library for the same purpose, for which advantages sincere thanks are returned. It is recommended that a set of the Journal of the Royal Statistical Society be purchased for the State Library, as many papers on statistical subjects of the greatest importance, and not to be obtained elsewhere, are therein contained. A set of this Journal would be of great value for reference by all the offices of the State concerned with statistical work, and if, as is believed to be the case, the regular Library appropriation is insufficient to warrant the necessary expenditure at the present time, a special sum should be granted for this purpose.

CONTENTS OF TABLES.

PART I.—VITAL STATISTICS AND POPULATION.

Table 1.—Marriages, births, deaths and natural increase of population in Michigan in 1892 6

2.—Marriages (divorces, 1867-86), births, deaths and natural increase of population in Michigan according to the returns since the establishment of the State system of registration, 1867-92. (See Diagram I for a graphic representation of the data of this table) 7

Vital statistics of Wayne county, as returned, 1880-92 8

3.—Growth of the State as shown by a comparison of the populations stated by the successive National and State censuses from 1810 to 1890 10

4.—Estimated populations for inter-census years by the geometric method and by adding the average annual increase for each year (the latter adopted in this report), together with the logarithms of the populations arranged for use in computing rates 11

5.—Relation of registration returns to population, giving the number of persons married, births, deaths and natural increase of population per 1,000 inhabitants for each year of the period 1868-92 13

Estimated births and deaths, birth-rates and death-rates of Michigan for the years 1887-92, after deduction of fraudulent returns from Wayne county 14

6.—Comparative table, showing the results of the National and State census enumerations of births and deaths in Michigan from 1870 to 1890 15

7.—Comparative table, showing the rates per 1,000 living population of *persons married* in certain countries and states during the years 1880-92 16

8.—Comparative table, showing the birth-rates per 1,000 living population in certain countries and states during the years 1880-92 (Diagram II) 17

9.—Comparative table, showing the death-rates per 1,000 living population in certain countries and States during the years 1880-92 (Diagram IX) 18

10.—Births, deaths and natural increase of population by months for six years, 1887-92 20

11.—Marriages, births and deaths in Michigan during the year 1892, arranged with reference to sex, color and nativity for comparison with the corresponding classes of the population according to the census of 1890 22

12.—Number of marriages, births, deaths and natural increase of population for each county of the State in the year 1892, with rates per 1,000 estimated population 23

13.—Comparison of the returns of marriages, births and deaths from each county in the State for the year 1892 with the corresponding returns for 1891; showing the increase or decrease in each county of each class of returns 26

14.—Character and movement of population of Michigan by counties, showing the number and percentage of increase or decrease of population of each county from 1880 to 1890; sex and nativity of inhabitants; the number of dwellings and families and persons to a dwelling and family according to the census of 1890; also the density of population (number of inhabitants to each square mile) and the principal products and industries of each county 30

PART II.—BIRTHS IN MICHIGAN, 1892.

A.—General Discussion of Births.

Table 15.—Births by quarters, 1892, compared with 1890, 1891, and with the average for ten years, 1882-91 43
16.—Births by months, 1892, compared with 1890, 1891, and with the average for ten years, 1882-91. The months are arranged in order of the number of births registered in each. 44
17.—Births, by sex and months, in each county of the State in 1892; also number of births of males to 100 births of females for each county 45
Color of children born in Michigan, 1892 53
18.—By parent-nativity and sex, the number and per cent of children born in Michigan, 1892. 54
19.—Comparison of parent-nativity of children born in Michigan in 1892 with 1890, 1891, and with the average of ten years, 1882-91 55
20.—Comparison of parent-nativity of children born in Michigan in 1891, 1892; with averages of the quinquennial periods, 1871-75, 1876-80, 1881-85, 1886-90 56
21.—Births, by parent-nativity and sex, for each county of the State in 1892 57

B.—Still-births, Plural and Illegitimate Births.

22.—Number of pairs of twins, still-births and illegitimate children born in each county of the State in 1892 66
23.—Ratios of still-born, twin and illegitimate children to total births, 1892; compared with 1889-91, and with the average for ten years, 1882-91 68
24.—Comparison of the number of pairs of twins and cases of triplets returned in Michigan for ten years, 1883-92, and ratios of these events to total births in each year 69
25.—Months of birth, by sex, of still-born, twin and illegitimate children, 1892 69
26.—Parent-nativity, by sex, of still-born, twin and illegitimate children, 1892 70
27.—Ratios of the sexes (number of males to 100 females) of children born alive, still-births, twins and illegitimates in 1892, compared with 1891 and with the average of ten years, 1882-91 71
28.—Comparison of the parent-nativity of plural births in Michigan for ten years, 1883-92 71
29.—Comparison of the numbers and rates per 1,000 births of illegitimate children born in Michigan for ten years, 1883-92, and also of the parent-nativities of the mothers of illegitimate children for the same time 72
30.—Comparison, by nativity and color, of the number and proportion (to total mothers) of the mothers of still-births in 1892; the same for 1890, 1891, and the average for ten years, 1882-91 72
31.—Comparison, by nativity and color, of the number and proportion (to total mothers) of the mothers of twins in 1892; the same for 1890, 1891, and the average for ten years, 1882-91 73
32.—Comparison, by nativity and color, of the number and proportion (to total mothers) of the mothers of illegitimate children born in 1892; the same for 1890, 1891, and the average for ten years, 1882-91 74

33.—List of townships reporting that no births occurred in 1892 74
34.—List of townships that failed to make returns of births for 1892 75

PART III.—MARRIAGES IN MICHIGAN, 1892.

Table 35.—Marriages by quarters, 1892, compared with 1890-91, and with the average for ten years, 1882-91 83
36.—Marriages by months, 1892, compared with 1890-91, and with the average for ten years, 1882-91. Months arranged in order of number of marriages performed in each 84
37.—Marriages by months, 1892,—detailed statement by counties 85
Color of persons married in Michigan, 1892 87

38.—Number and per cent of persons married, by nativity and sex, 1892 88
39.—Marriages in Michigan, by nativity, 1892, compared with 1891, and with quinquennial averages for the periods 1871-75, 1876-80, 1881-85, 1886-90 88
40.—The average ages, by nativity, of persons married in Michigan in 1892, compared with 1889-91, and with the mean of ten years, 1882-91 89
41.—(a) Marriages by nativity and (b) number of persons married by sex and periods of age in 1892,—detailed statement by counties 90
42.—Marriages in 1892 arranged according to the periods of age of bridegrooms and brides 98
43.—Number of persons married in Michigan under the legal ages, by sex, during ten years, 1883-92 99
44.—Comparison of the per cents of males married at each period of age in 1892, with 1891, and with the quinquennial periods, 1871-75, 1876-90, 1881-85, 1886-90 100
45.—Comparison of the per cents of females married at each period of age in 1892, with 1891, and with the quinquennial periods 1871-75, 1876-80, 1881-85, 1886-90 100

PART IV.—DEATHS IN MICHIGAN, 1892.

SECTION I.—OCCURRENCE OF DEATHS BY MONTHS AND BY AGE, SEX, AND NATIVITY OF DECEDENTS.

Table 46.—Number of deaths returned in Michigan for 1892, by quarters, compared with the years 1890, 1891, and with the average for ten years, 1882-91 107
47.—Number of deaths returned in Michigan for 1892, by months, greatest first, compared with the years 1890, 1891, and with the average for ten years, 1882-91 107
48.—Deaths in Michigan by sex, for each of the years 1880-92, inclusive, with death-rates per 1,000 population of same sex, and ratios of deaths of males to deaths of females 109
49.—Deaths in Michigan, by sex and periods of age, returned for the year 1892 110
50.—Population, deaths, death-rates per 1,000 population and per cents of deaths at certain specified ages, for each of the years 1870-92, inclusive; also ratio of deaths under one year of age to total living births for each year 112
51.—Comparison of populations at certain specified periods of age as stated by the United States and State censuses from 1870 to 1890 114
52.—Per cents of increase of the population at certain specified periods of age through decennial periods, according to the United States and State censuses 114
53.—Deaths, by months, at certain periods of age, showing the relations of the deaths in each month and age-period to total deaths during the year for the corresponding months and age-periods 116
Death-rates of children under five years of age, by counties, 1892 117
54.—Statement, by counties, of the number of deaths returned in Michigan for the year 1892, specifying sex, months and periods of age of decedents 118
55.—Statement, by sex, months and ages in periods of years, of the number of deaths returned in Michigan for the year 1892 130
56.—Statement, by sex, months and ages in years (in months for those aged less than one year), of the number of deaths returned in Michigan for the year 1892 133
57.—The average age of decedents in Michigan, by nativity, for the year 1892, and comparison with the years 1890-91, and the average for ten years, 1882-91 (still-births included) 143
The average age of decedents in Michigan, by nativity, 1892, (with exclusion of still-births) 143

Infant Mortality, 1892.

58.—Number of still-births returned for 1892, and per cent of total deaths; comparison with the years 1890-91, and with the average for ten years, 1882-91 144
59.—Number of infants dying under one year of age in 1892; showing the number dying at each age, in months, for each month of the year; also the months of birth of such children in 1891 and 1892 145

60.—Comparison, by sex and months, of the number of deaths of infants born in 1891 and dying in 1891 and 1892 aged less than one year, with the total number of births in 1891.. 147
61.—Comparison, by months, of the number of births in 1891, and of the deaths of the children born in 1891 who died in 1891 and 1892 aged less than one year; showing the total number dying at each age in months, and the ratios of deaths in month of birth to deaths in year of birth and to total births 148
62.—Comparison, by sex and months, of the deaths of infants aged under one month to the number of births returned, 1892 149

63.—Statement, by counties, of the number of deaths returned in Michigan for the year 1892, specifying sex and color or race 150
64.—Number and percentage of deaths of each nativity in 1892, compared with 1890-91, and with the average for ten years, 1882-91 153
65.—Statement, by counties, of the number of deaths returned in Michigan for the year 1892, specifying sex and nativity 154
66.—Population (estimated), deaths and death-rates per 1,000 population, by periods of age, for each nativity, 1892 157

67.—List of townships reporting that no deaths occurred in 1892, showing population in 1890 158
68.—List of townships making no returns of deaths for 1892, showing population in 1890.... 159

SECTION II.—CAUSES OF DEATH.

A.—*Diseases returned as Causes of Death, 1892.*

69.—Important diseases returned as causes of death in Michigan during the year 1892, by sex, months of death and periods of age 164
70.—Important diseases returned as causes of death in Michigan during the year 1892, by counties 168
71.—Important diseases returned as causes of death in Michigan for each of the years 1869-92, inclusive 176
Comparison of death-rates by counties for the year 1892 based upon estimated populations according to Table 5 and the mean of the censuses of 1890 and 1894 180
72.—Geographical divisions of the State used in the study of the distribution of causes of death. Accompanied by map 181
73.—Deaths from "old age" and deaths of persons aged under 5 years and over 70 years, by geographical divisions, 1892 182
74.—Certain important diseases returned as causes of deaths in 1892, by geographical divisions:—Consumption, pneumonia, influenza, diphtheria, croup, scarlet fever, typhoid fever and diarrheal diseases 188
Deaths and death-rates from consumption, by counties, 1888-92. With map 191
Death-rates from consumption in Michigan per 100,000 population, 1869-92 (Diagram III.) 192
Death-rates from diphtheria and croup in Michigan per 100,000 population, 1869-92 (Diagram V.) 194
Deaths and death-rates from diphtheria and croup, by counties, 1889-92. With map 195
Death-rates from scarlet fever in Michigan per 100,000 population, 1869-92 (Diagram VII.). 196
Death-rates from typhoid fever (returned as such) in Michigan per 100,000 population, 1869-92 (Diagram VI.) 197
Death-rates from measles in Michigan per 100,000 population, 1869-92 (Diagram VIII.)... 197
Death-rates from small-pox in Michigan per 100,000 population, 1869-92 198
Death-rates from whooping-cough in Michigan per 100,000 population, 1869-92 199
Death-rates from cancer in Michigan per 100,000 population, 1869-92 200
75.—Deaths from cancer returned for the year 1892 and for the twenty years 1872-91, specifying sex and organs affected. With note on deaths from "tumor," 1892 201
Deaths returned from influenza in Michigan, by months, for the years 1889-92 203
Deaths returned from pneumonia in Michigan, by months, for the years 1888-92 204
Death-rates from pneumonia in Michigan per 100,000 population, 1869-92 (Diagram IV.).. 205

Comparative Mortality of Michigan and other States.

76.—Comparative mortality from all causes in Michigan and in certain States and foreign countries for the years 1880-92, inclusive. Diagram 207
77.—Comparative mortality from certain specified causes of death in Michigan, Massachusetts and England, by five-year periods, 1871-90 209
78.—Comparative mortality from consumption in Michigan, certain other States and England for the years 1880-92 211
79.—Comparative mortality from diphtheria and croup in Michigan, certain other States and England for the years 1880-92 212
80.—Comparative mortality from typhoid fever in Michigan, certain other States and England for the years 1880-92 212
81.—Comparative mortality from scarlet fever in Michigan, certain other States and England for the years 1880-92 213

B.—*Deaths from Violence, 1892.*

82.—Deaths from violence in Michigan during the year 1892, classified 214
83.—Deaths from violence in Michigan in 1892, by counties 215
Lives lost on the Great Lakes from December, 1885, to November, 1893 218
Deaths and injuries on railroads in Michigan, 1891-92, specifying classes of persons injured and manner of injury 220
Passengers carried, deaths and injuries on railroads in Michigan, 1882-93 221
Death and injury rates per 1,000 employed of different classes of railroad employes in Michigan, 1892 221
84.—Deaths from suicide in Michigan, 1874-92, showing months of death, sex and civil condition of decedents 224
85.—Deaths from suicide in Michigan, 1874-92, showing (*a*) occupations; (*b*) nativities; and (*c*) means of death used 225

Old Classified and Alphabetical Tables of Causes of Death.

86.—Number and per cent of deaths returned from each class of causes (Dr. Farr's classification), 1890-92; with average for ten years, 1882-91 227
87.—Number of deaths returned from each class of causes for each month of the year 1892 227
88.—Deaths by geographical divisions:—Number and rate per 1,000 population, and percentage of each class of causes to total deaths from all causes for each division of the State, 1892 228
89.—Causes of death in Michigan, 1871-92:—*Classified Arrangement* (Dr. Farr's) comparing the deaths returned and death-rates per 100,000 population from each cause, order and class in 1892 with the corresponding figures for 1891, and for the five-year periods 1871-75, 1876-80, 1881-85, 1886-90 229
90.—Causes of death in Michigan, 1887-92:—*Alphabetical List* of causes of death as returned, showing months of death and periods of age of decedents, by sex, for 1892, and total deaths from each cause, by sex, for the years 1887-91 235

METEOROLOGICAL TABLES.

91.—Average temperature, by year and months, of 1892, compared with 1891, 1890 and average of 14 years, 1877-90 266
92.—Average daily range of temperature, by year and months of 1892, compared with 1891, 1890 and average of 12 years, 1879-90 267
93.—Extremes and range of temperature, by year and months, of 1892, compared with the years 1885-91, inclusive, and with the average for 14 years, 1877-90 267
94.—Average absolute humidity, by year and months, of 1892, compared with 1891, 1890 and average of 14 years, 1877-90 268
95.—Average relative humidity, by year and months, of 1892, compared with 1891, 1890 and average of 13 years, 1878-90 268
96.—Average per cent of cloudiness, by year and months, of 1892, compared with 1891, 1890 and average of 14 years, 1877-90 268
97.—Inches of rain and melted snow, by year and months, of 1892, compared with 1891, 1890 and average of 14 years, 1877-90 269

98.—Average day ozone, by year and months, of 1892, compared with 1891, 1890 and average of 14 years, 1877-90 269
99.—Average night ozone, by year and months, of 1892, compared with 1891, 1890 and average of 14 years, 1877-90 269
100.—Average atmospheric pressure, by year and months, of 1892, compared with 1891, 1890 and average of 14 years, 1877-90 270
101.—Average daily range of atmospheric pressure, by year and months, of 1892, compared with 1891, 1890 and average of 9 years, 1882-90 270

AVERAGE AGES OF DECEDENTS BY OCCUPATIONS.

Classes of decedents showing high average ages at death 271
Classes of decedents showing low average ages at death 271
103.—Average ages of decedents, by classified occupations, for the year 1892 and for the twenty-two years, 1870-91 272

PART V.—VITAL STATISTICS OF CITIES IN MICHIGAN, 1890-92.

Table 104.—Population of the cities of Michigan according to the State censuses of 1884 and 1894 and the United States census of 1890 282
Increase in numbers and percentage to total population of Michigan cities from 1864 to 1894 283
Comparison of city and country birth-rates and death-rates according to the returns, 1890-92 284
105.—Births and deaths and birth-rates and death-rates of Michigan cities according to the returns under the State system of registration for each of the years 1890-92 285
106.—Status of local municipal registration of vital statistics in Michigan, containing references to provisions of charters and ordinances relating to registration, officers acting as local registrars, and whether certificates of death and burial permits are required 288
Deaths and death-rates registered in certain cities of Michigan, 1890-92 315
107.—Deaths registered from important diseases and groups of diseases in Detroit, by months, for each of the years 1890-92, inclusive 316
108.—Deaths registered from important diseases and groups of diseases in Grand Rapids, by months, for each of the years 1890-92, inclusive 318
Comparison of death-rates per 100,000 population from certain important diseases as enumerated by supervisors for the State of Michigan, and as immediately registered by city boards of health for Detroit and Grand Rapids, 1890-92 320
Comparison, by months, of the deaths enumerated in the State of Michigan, Kent and Wayne counties, for the year 1892, and deaths registered by the local authorities for the same time in Detroit and Grand Rapids 321
Comparison, by months, of the deaths enumerated from consumption in Michigan in 1892, and the deaths registered from consumption in Detroit and Grand Rapids for the same time 322
109.—Comparative mortality of certain cities of the United States for the year 1892 323

APPENDIX.

Laws and amendments relating to marriage and the requirement of a license to marry 327
Law providing for registration of births and deaths 331
Suggestions in regard to marriage returns 335
Instructions to supervisors in regard to collection of births and deaths 336
Instructions to county clerks in regard to the proper return of births, marriages and deaths 339
Alphabetical index 341

MAPS AND DIAGRAMS.

Diagram I.—Number of births, marriages (persons married) and deaths in Michigan according to the State registration for each year, 1868-92, compared with the United States census enumerations of births and deaths and with the average annual increase of population. (Showing also the probable amount of fraudulent returns of births from Wayne county for the years 1887-91, inclusive) 1

Diagram II.—Diminution in the birth-rates of the United States and certain foreign countries 40

Map.—Showing the geographical divisions of the State employed in the study of the distribution of causes of death; also the average death-rates from consumption, by counties, for the five-year period, 1888-92. (See page 191 for data represented) 181

Diagram III.—Death-rates from consumption in Michigan, 1869-92. (See table on page 192 for data represented) 192

Diagram IV.—Death-rates from pneumonia in Michigan, 1869-92. (See table on page 205 for data represented) 192

Map.—Showing the average death-rates from diphtheria and croup, by counties, for the five-year period, 1888-92. (See page 195 for data represented) 195

Diagram V.—Death-rates from diphtheria and croup in Michigan, 1869-92. (See table on page 194 for data represented) 196

Diagram VI.—Death-rates from typhoid fever in Michigan, 1868-91. (See table on page 197 for data represented) 196

Diagram VII.—Death-rates from scarlet fever in Michigan, 1868-91. (See table on page 193 for data represented) 198

Diagram VIII.—Death-rates from measles in Michigan, 1868-91. (See table on page 197 for data represented) 198

Diagram IX.—Comparative mortality from all causes in certain States and foreign countries, 1880-92. (See Table 76, page 207, for data represented) 207

NOTE ON EXPRESSION OF RATIOS.

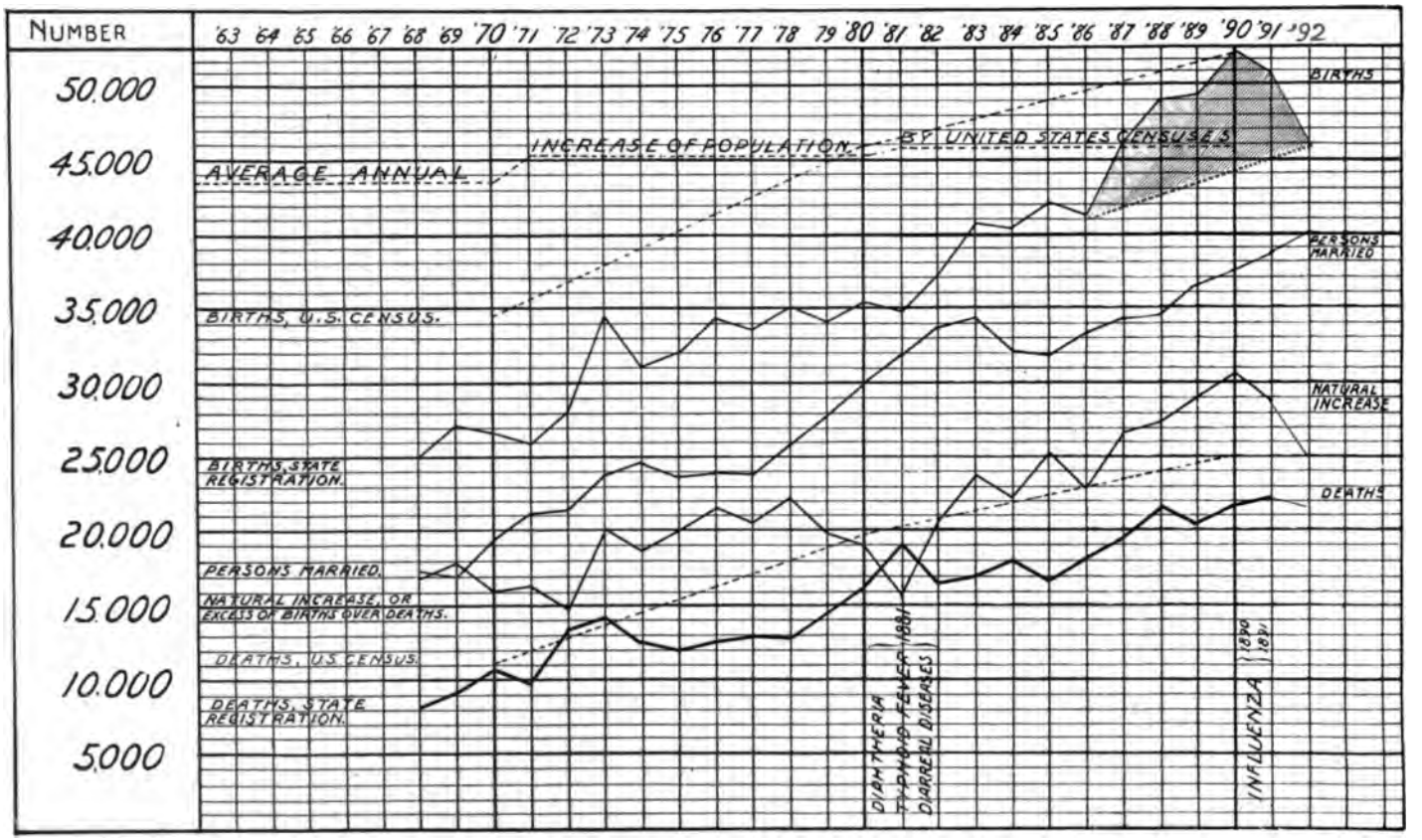
All ratios, whether rates per hundred (per cents), per thousand or per hundred thousand, are stated to the first decimal place (tenths). They are necessarily calculated to the second decimal place (hundredths), the rule being to call .05 (or more) an additional .1 and to reject less than .05. The same rule is followed in quoting ratios from previous years in which hundredths are expressed.

When a number is divided into parts, the relations of which are expressed as per cents of the total, it will often be found that the per cents of the several parts added together are slightly less or greater than 100.0 per cent—that is, if any uniform rule is followed in regard to fractional remainders. This is sometimes obviated by the process known as "forcing a balance," in which the fractional excess or deficiency is arbitrarily distributed in such a way that the apparent difficulty disappears. The matter is of little consequence, and is referred to only for the purpose of stating that such ratios are given as calculated, without adjustment, in the present report.

ERRATA.

In Diagram I, p. 1, read *diarrheal* diseases. On p. 4, the deaths registered for Grand Rapids in 1890 were exclusive of still-births as well as those of Detroit; the deaths registered for Manistee and Muskegon are for the census year 1889-90. On p. 9, fourth line from top, substitute *such comparisons* for *gross mortality*. In Table 4, p. 11, the estimated population of 1882 is *1,728,327* instead of 1,782,327. On p. 35, in tabular comparison at bottom of page, read per cent aged 5–14, inclusive, for Michigan, *21.9* instead of 21.4. On p. 103, third line of second paragraph, read *their* proximity. On p. 111, cancel the first clause of the last sentence. On p. 194, fourth line of second paragraph, cancel the clause "which represents the deaths returned as diphtheria alone." Diagram V represents the death-rates from diphtheria and croup taken together as given in the table on p. 194. On p. 199, second line of third paragraph, read "The nature of the returns *does*, etc." In Table 103, p. 272, the aggregate age of gardeners for twenty-two years is *18,755.0* years; on same page, the aggregate age of ship carpenters should be *396.5* years; on p. 273, the average age of boiler makers for twenty-two years is 45.9 years, while the aggregate age is *2,113.5* years; on p. 275, the aggregate age of railroad expressmen is *669.5* years. These changes, due to transposition of decimal points in copying, do not affect the totals, by classes, which are substantially correct. In Table 105, p. 286, insert asterisk after Norway. On page 324, sixth line from top, read Table *107*.

DIAGRAM I-REGISTRATION OF VITAL STATISTICS IN MICHIGAN; 1868-1892.



The numbers registered for 1892 are indicated by the terminations of the red lines, _____ . The dotted red line, ... , represents the probable number of births that should have been returned for the years 1887-91. The shaded area in red lying between this line and the line of births actually registered above indicates fraudulent returns from the city of Detroit for those years. See pages 6-8 for fuller explanation.

TWENTY-SIXTH ANNUAL REGISTRATION REPORT OF MICHIGAN.

PART I.—VITAL STATISTICS AND POPULATION.

In this portion of the report a general view will be given of the more important features of the registration returns for the year 1892, together with certain comparisons with the corresponding results of previous years of registration, and some data relating to the character and movement of population in the State that are of interest to the student of vital statistics.

Births, marriages and deaths are the occurrences of importance in the lives of the citizens of this State concerning which information is at present collected by law, and authorized to be annually published in these "Vital Statistics Reports." The facts relating to these three classes of events would, if accurately collected, fairly represent the vital history of the State, and as such be of great value to students of sociology and to practical workers in sanitary science. It is deeply to be regretted that, under the present registration law, the returns of births and deaths are very imperfect, probably as large a proportion as two deaths out of every five that actually occur being unreturned. This large percentage of omissions quite invalidates the conclusions derived from their study in certain directions, and should be thoroughly understood at the outset before attempting to make any use of them.

It should be distinctly understood, however, that the fact that the Michigan registration returns have always been very deficient so far as a complete record of all the births and deaths that occur in the State is concerned, does not invalidate *all* conclusions drawn from their study. Thus the changes in mortality from year to year are perfectly comparable under the assumption that the percentage of omissions in different years is practically constant. The close correspondence between the evidence given by the Michigan returns and those of States in which more perfect systems are in operation, fully confirms this opinion, and justifies confidence in these annual registration reports as truly indicating, although on a reduced scale, the variations in the

public health from year to year. The relative importance of various diseases as causes of death may probably be correctly inferred from the returns; also the geographical distribution of infectious and other diseases through the State, and the relative numbers of deaths from different causes at the various age-periods. All these are important, and would perhaps justify the continuance of the present system if no better were obtainable. As an example of the practical uses made of these statistics at present, reference may be made to the various diagrams and tables based upon these returns that are found in the annual reports of the State Board of Health. That for the year 1891, in alluding to certain "interesting and valuable comparisons of the statistics of deaths (from typhoid fever), published by the Secretary of State, with statistics of sickness reported to the State Board of Health," says: "The result is very satisfactory, because there is conclusive evidence of the usefulness of both series of statistics; and because they yield valuable evidence on the causation of an important disease."

The statistics relating to marriages are obtained in an entirely different manner from those relating to births and deaths, and since the law of 1887 requiring a license to be issued by the county clerk as a necessary preliminary to the ceremony, at which time affidavit of the essential facts of record relating to the parties to the marriage is required to be made, the returns have been very perfect. It is necessary, however, under the license system to exercise vigilance in order that delayed returns from the officiating clergymen or justices to the county clerks may be properly sent in by them to the State Department, thus completing the records used as the basis of compilation. No less than 978 delayed returns of this description were completed by correspondence for the registration year 1892, 390 of these being from Wayne county alone.

SUMMARY OF REGISTRATION RETURNS FOR THE YEAR 1892.

Total number of marriages,	**20,107**
Persons married,	**40,214**
Persons married per 1,000 estimated population,	**18.4**
Total number of births,	**46,221**
Births per 1,000 estimated population,	**21.2**
Total number of deaths,	**21,729**
Deaths per 1,000 estimated population,	**9.9**
Natural increase of population,	**24,492**
Natural increase per 1,000 estimated population,	**11.3**

In the above summary the rates are calculated to an estimated population of 2,185,279, obtained by assuming that the annual increments of population of the State for the two years that have elapsed since the census of 1890 were the same as the average annual increments for the inter-census period, 1880-90. This method, as was shown in the report for last year and as may be seen also in Table 4 following, probably gives better results for the peculiar conditions of growth of the population of this State than the ordinary method employed in registration reports,—that of assuming that the populations of successive years stand in the relations of the terms of a geometric series to one another. The latter method may be useful where the natural increase of population is the predominant factor of growth; in Michigan, where the amount of immigration is an important element of increase, it does not appear to be so applicable.

The number of marriages stated above is probably very nearly the entire truth. An

allowance of less than one per cent would, there is reason to believe, cover all delayed and delinquent returns for the year.

The enumeration of births and deaths is much more imperfect. The absolute numbers and the rates per 1,000 based thereon as given above are undoubtedly much lower than the actual truth. If a uniform increase of 60 per cent be made in the numbers returned and in the corresponding rates, we shall have, for births, instead of 46,221 as returned, 73,954, a number almost certainly less than the actual number of births that occurred; the corresponding birth-rate would be 33.8 per 1,000 living population. For deaths we should have 34,766 instead of 21,729 as returned, and a death-rate of 15.9 instead of 9.9. Again it may be said that these numbers are safely within the limits of probability. In round numbers it may be asserted that out of every five births or deaths that actually occur in the State, only three are properly recorded according to law; two out of every five fail to be registered, and thus not only the statistical value of the registration is impaired, but also its reliability and accuracy as a legal record is interfered with.

Some of the arguments and opinions supporting the belief that the birth-rates and death-rates of Michigan according to the registration returns are far below the truth, may be briefly referred to:

(1) The method of collection of births and deaths is that of *enumeration*, as opposed to the method of *immediate registration* of these events as they occur. The enumeration or ordinary census method is recognized as a failure by census authorities and vital statisticians the world over so far as the collection of vital data is concerned. As far back as the Seventh Census of the United States (1850) it was stated that: "The tables of the census which undertake to give the total number of births, marriages and deaths in the year preceding the first of June, 1850, can be said to have but little value. Nothing short of a registration system in the States will give these data with even approximate truth. . . . Against all reasonings the facts have proved that people will not, or cannot, remember and report to the census taker the number of such events, and the particulars of them, which have happened in the period of a whole year to eighteen months prior to the time of his calling." The experience of every National census from that time to the present has only confirmed this statement. Dr. Billings, Medical Superintendent of the Mortality Statistics of the Eleventh Census (1890), in a letter in regard to the enumeration of deaths by the last census, estimates the deficiency in the returns for the United States and for Michigan, as follows:—

"Excluding the Indians, the total number of deaths reported as having occurred in the United States during the census year ending May 31, 1890, was 872,944, giving a death-rate of 13.94 per 1,000 of population.

"For the State of Michigan the number of deaths reported was 25,016, giving a death-rate of 11.95 per 1,000 of population. As the result of several different calculations which I cannot here repeat, I have concluded that the death-rate for the whole United States was about 18 per 1,000, or about the same that it was in 1880. As regards Michigan, I have not attempted to make any correct estimate, the data for the purpose being very deficient.

"Taking Connecticut, Delaware, the District of Columbia, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont, for all of which states there were registrations of deaths, I find that the average death-rate per 1,000 of population was 20.38. The proportion of large cities in these areas was considerably greater than it was in Michigan; hence the death-rate in Michigan was below this average, and probably it would be safe to say that it was a little below the United States average, or between 17 and 18 per 1,000."

(2) The registration reports of Michigan from 1870 to 1890 contain "corrected tables" of deaths in which an estimate is made of the deficiency in the returns for each year.

60.—Comparison, by sex and months, of the number of deaths of infants born in 1891 and dying in 1891 and 1892 aged less than one year, with the total number of births in 1891.. 147
61.—Comparison, by months, of the number of births in 1891, and of the deaths of the children born in 1891 who died in 1891 and 1892 aged less than one year; showing the total number dying at each age in months, and the ratios of deaths in month of birth to deaths in year of birth and to total births 148
62.—Comparison, by sex and months, of the deaths of infants aged under one month to the number of births returned, 1892 149

63.—Statement, by counties, of the number of deaths returned in Michigan for the year 1892, specifying sex and color or race 150
64.—Number and percentage of deaths of each nativity in 1892, compared with 1890-91, and with the average for ten years, 1882-91 153
65.—Statement, by counties, of the number of deaths returned in Michigan for the year 1892, specifying sex and nativity 154
66.—Population (estimated), deaths and death-rates per 1,000 population, by periods of age, for each nativity, 1892 157

67.—List of townships reporting that no deaths occurred in 1892, showing population in 1890 158
68.—List of townships making no returns of deaths for 1892, showing population in 1890.... 159

SECTION II.—CAUSES OF DEATH.

A.—*Diseases returned as Causes of Death, 1892.*

69.—Important diseases returned as causes of death in Michigan during the year 1892, by sex, months of death and periods of age 164
70.—Important diseases returned as causes of death in Michigan during the year 1892, by counties 168
71.—Important diseases returned as causes of death in Michigan for each of the years 1869-92, inclusive 176
Comparison of death-rates by counties for the year 1892 based upon estimated populations according to Table 5 and the mean of the censuses of 1890 and 1894 180
72.—Geographical divisions of the State used in the study of the distribution of causes of death. Accompanied by map 181
73.—Deaths from "old age" and deaths of persons aged under 5 years and over 70 years, by geographical divisions, 1892 182
74.—Certain important diseases returned as causes of deaths in 1892, by geographical divisions:—Consumption, pneumonia, influenza, diphtheria, croup, scarlet fever, typhoid fever and diarrheal diseases 183
Deaths and death-rates from consumption, by counties, 1888-92. With map 191
Death-rates from consumption in Michigan per 100,000 population, 1869-92 (Diagram III.) 192
Death-rates from diphtheria and croup in Michigan per 100,000 population, 1869-92 (Diagram V.) 194
Deaths and death-rates from diphtheria and croup, by counties, 1889-92. With map 195
Death-rates from scarlet fever in Michigan per 100,000 population, 1869-92 (Diagram VII.). 196
Death-rates from typhoid fever (returned as such) in Michigan per 100,000 population, 1869-92 (Diagram VI.) 197
Death-rates from measles in Michigan per 100,000 population, 1869-92 (Diagram VIII.)... 197
Death-rates from small-pox in Michigan per 100,000 population, 1869-92 198
Death-rates from whooping-cough in Michigan per 100,000 population, 1869-92 199
Death-rates from cancer in Michigan per 100,000 population, 1869-92 200
75.—Deaths from cancer returned for the year 1892 and for the twenty years 1872-91, specifying sex and organs affected. With note on deaths from "tumor," 1892 201
Deaths returned from influenza in Michigan, by months, for the years 1889-92 203
Deaths returned from pneumonia in Michigan, by months, for the years 1888-92 204
Death-rates from pneumonia in Michigan per 100,000 population, 1869-92 (Diagram IV.).. 205

Comparative Mortality of Michigan and other States.

76.—Comparative mortality from all causes in Michigan and in certain States and foreign countries for the years 1880-92, inclusive. Diagram 207
77.—Comparative mortality from certain specified causes of death in Michigan, Massachusetts and England, by five-year periods, 1871-90 209
78.—Comparative mortality from consumption in Michigan, certain other States and England for the years 1880-92 211
79.—Comparative mortality from diphtheria and croup in Michigan, certain other States and England for the years 1880-92 212
80.—Comparative mortality from typhoid fever in Michigan, certain other States and England for the years 1880-92 212
81.—Comparative mortality from scarlet fever in Michigan, certain other States and England for the years 1880-92 213

B.—*Deaths from Violence, 1892.*

82.—Deaths from violence in Michigan during the year 1892, classified 214
83.—Deaths from violence in Michigan in 1892, by counties 215
Lives lost on the Great Lakes from December, 1885, to November, 1893 218
Deaths and injuries on railroads in Michigan, 1891-92, specifying classes of persons injured and manner of injury 220
Passengers carried, deaths and injuries on railroads in Michigan, 1888-93 221
Death and injury rates per 1,000 employed of different classes of railroad employes in Michigan, 1892 221
84.—Deaths from suicide in Michigan, 1874-92, showing months of death, sex and civil condition of decedents 224
85.—Deaths from suicide in Michigan, 1874-92, showing (*a*) occupations; (*b*) nativities; and (*c*) means of death used 225

Old Classified and Alphabetical Tables of Causes of Death.

86.—Number and per cent of deaths returned from each class of causes (Dr. Farr's classification), 1890-92; with average for ten years, 1882-91 227
87.—Number of deaths returned from each class of causes for each month of the year 1892 227
88.—Deaths by geographical divisions:—Number and rate per 1,000 population, and percentage of each class of causes to total deaths from all causes for each division of the State, 1892 228
89.—Causes of death in Michigan, 1871-92:—*Classified Arrangement* (Dr. Farr's) comparing the deaths returned and death-rates per 100,000 population from each cause, order and class in 1892 with the corresponding figures for 1891, and for the five-year periods 1871-75, 1876-80, 1881-85, 1886-90 229
90.—Causes of death in Michigan, 1887-92:—*Alphabetical List* of causes of death as returned, showing months of death and periods of age of decedents, by sex, for 1892, and total deaths from each cause, by sex, for the years 1887-91 235

METEOROLOGICAL TABLES.

91.—Average temperature, by year and months, of 1892, compared with 1891, 1890 and average of 14 years, 1877-90 266
92.—Average daily range of temperature, by year and months of 1892, compared with 1891, 1890 and average of 12 years, 1879-90 267
93.—Extremes and range of temperature, by year and months, of 1892, compared with the years 1885-91, inclusive, and with the average for 14 years, 1877-90 267
94.—Average absolute humidity, by year and months, of 1892, compared with 1891, 1890 and average of 14 years, 1877-90 268
95.—Average relative humidity, by year and months, of 1892, compared with 1891, 1890 and average of 13 years, 1878-90 268
96.—Average per cent of cloudiness, by year and months, of 1892, compared with 1891, 1890 and average of 14 years, 1877-90 268
97.—Inches of rain and melted snow, by year and months, of 1892, compared with 1891, 1890 and average of 14 years, 1877-90 269

Table 1 gives a statement of the number of marriages, births, deaths and excess of births over deaths recorded for the year 1892. In order to make these numbers more easily comprehended, calculations are given of the average number of each returned for certain subdivisions of the year. Thus 55 marriages occurred, on the average, on every day of the year 1892 in various parts of the State. There were 127 children born and 60 deaths in the same time. The net daily increase of the population of the State, aside from the number added by immigration, was 67 persons.

Table 1.—*Number of marriages, births, deaths and excess of births over deaths in Michigan during the year 1892, with the average numbers for certain subdivisions of the year.*

Periods of time—1892.	Marriages, 1892.	Births, 1892.	Deaths, 1892.	Excess of births over deaths, 1892.
Total for year	20,107	46,221	21,729	24,492
Average number per quarter	5,027	11,555	5,432	6,123
Average number per month	1,676	3,852	1,811	2,041
Average number per week	387	889	418	471
Average number per day	55	127	60	67

In Diagram I the continuations of the several curves representing the numbers of births, marriages and deaths returned for the successive years of registration, are printed in red for the year 1892. If the point representing the births returned for this year (46,221) be connected with the point marking the returns for the year 1886 (the frauds in Wayne county seem to begin in 1887), the dotted line marking the average between these points probably more nearly represents the actual results of enumeration in the intervening years, 1887-91, than the curve originally printed in the diagram. The shaded area included between these curves would represent the total amount of fraudulent returns, about 30,000 in number, for the five years. The births returned for the years 1887-91, after making this deduction, would be as follows: 1887, 42,156; 1888, 42,091; 1889, 44,833; 1890, 42,916; 1891, 45,561. The corresponding changes in birth-rates for these years will be stated under Table 5. With these alterations the curve representing births in Michigan becomes much more intelligible, and the altogether inexplicable rise in birth-rates in Michigan as given in Table 5 disappears. No corresponding increase in marriage or death-rates accompanied it, and the experience of the United States as a whole and of all European countries shows a *persistent decrease in the birth-rate in recent years.* See Part II for a fuller account of this interesting and important subject.

Table 2 furnishes a condensed view of the results actually obtained by the Michigan system of registration. The variations from year to year may be studied by comparison with the five-year averages stated in the table, or, better, by reference to Diagram I, where the figures of this table are graphically shown. Since 1868, which is the first year in which the enumeration of vital statistics may be considered fairly in operation, there is generally shown an increase, fairly uniform in amount, of each year over the one preceding, and corresponding closely to the increasing population of the State.

Table 2.—*Number of marriages, births and deaths registered in Michigan from 1867 to 1892; also the excess of births over deaths and the per cent of deaths to births for each year; the number of divorces from 1868 to 1886; the excess of marriages over divorces and the per cent of marriages to divorces. (All are compared with averages for the five-year periods, 1871–75, 1876–80, 1881–85, 1886–90).*

Years.	Marriages and divorces.				Births and deaths.			
	Marri'gs.	Divorc's*	Per cent.	Excess of marriages over divorces.	Births.	Deaths.	Per cent.	Excess of births over deaths.
1867†	4,312	449	.....	.....	14,000	4,409	31.5	9,591
1868	8,697	509	5.9	8,188	25,020	8,285	32.9	16,735
1869	8,459	493	5.8	7,966	27,093	9,145	33.8	17,948
1870	9,791	554	5.7	9,237	26,663	10,766	40.4	15,897
1871	10,605	630	5.9	9,975	25,992	9,728	37.4	16,264
1872	10,752	620	5.8	10,132	27,993	13,371	47.8	14,622
1873	11,897	705	5.9	11,192	34,608	14,258	41.2	20,350
1874	12,255	794	6.5	11,461	31,151	12,500	40.1	18,651
1875	11,851	864	7.3	10,987	31,958	11,990	37.5	19,968
Average of 5 years, 1871-1875	11,472	723	6.3	10,749	30,340	12,369	40.8	17,971
1876	11,913	800	6.7	11,113	34,285	12,576	36.7	21,659
1877	11,899	927	7.8	10,972	33,395	12,919	38.7	20,476
1878	12,880	993	7.7	11,887	35,162	12,766	36.3	22,396
1879	13,892	1,110	8.0	12,782	34,122	14,407	42.2	19,715
1880	14,935	1,149	7.7	13,786	35,323	16,102	45.6	19,221
Average of 5 years, 1876-1880	13,104	996	7.6	12,108	34,447	13,754	39.9	20,693
1881	15,894	1,313	8.3	14,581	34,749	19,238	55.4	15,511
1882	16,830	1,335	7.9	15,495	37,026	16,425	44.4	20,601
1883	17,174	1,383	8.1	15,791	40,809	16,906	41.4	23,903
1884	15,989	1,239	7.7	14,750	40,408	18,056	44.7	22,352
1885	15,885	1,227	7.7	14,658	42,119	16,646	39.5	25,473
Average of 5 years, 1881-1885	16,354	1,299	7.9	15,055	39,022	17,454	44.7	21,568
1886	16,665	1,339	8.0	15,326	41,095	18,187	44.3	22,908
1887	17,179	.....	.....	.....	46,226	19,482	42.1	26,744
1888	17,297	.....	.....	.....	43,952	21,764	44.5	27,188
1889	18,317	.....	.....	.....	49,272	20,315	41.2	28,957
1890	18,664	.....	.....	.....	52,306	21,642	41.4	30,664
Average of 5 years, 1886-1890	17,624	.....	.....	.....	47,570	20,278	42.6	27,292
1891	19,244	.....	.....	.....	50,812	22,079	43.5	28,733
1892	20,107	.....	.....	.....	46,221	21,729	47.0	24,492
Total registration, 1867-1892	363,383	.....	.....	.....	946,710	395,641	41.8	551,069

* From report of United States Labor Commissioner, 1889. Michigan collects no statistics concerning divorces.

† April 5 to December 31, 1867.

The number of marriages in 1892 exceeds the number returned for any previous year. The number of deaths returned is also larger than for any previous year except 1891. The number of births returned shows a great falling-off as compared with the years immediately preceding. This decrease in the number of births returned to the State department is not believed to be due to any marked actual decrease in the number of births that occurred in the State during the year 1892 as compared with the years 1887-91, but to gross frauds in the returns of births from Wayne county for those years.* The return of births for the year 1892 is probably much less affected by such irregularities, and hence shows an apparent decrease as compared with years in which a large number of fictitious births were entered.

The column showing the number of divorces, is inserted to call attention to a most important class of vital statistics, the registration and tabulation of which is entirely omitted in this State. The figures presented are from the report made to Congress in 1889, after a special investigation, by the United States Commissioner of Labor. By comparing the five-year averages it will be seen that the ratio of divorces to marriages is steadily increasing—from 6.3 per cent for 1871-75 to 7.9 per cent for 1881-85. The difference between the number of marriages and divorces shows the number of couples actually added each year to those living in marital relations, and should be considered in studying the relations between marriage- and birth-rates.

* The following table shows the number of marriages, births and deaths returned from Wayne county by the State registration for each of the years 1880-92, together with the populations of the county by the United States censuses of 1880 and 1890, the State census of 1884, and estimates for the inter-census years. Rates per 1,000 population for persons married, births and deaths represent these returns as compared with the enumerated or estimated number of inhabitants of each year:

Vital statistics of Wayne county as returned, 1880-92.

Year.	Populati'n.	Number of marriages.	Number of births.	Number of deaths.	Rates per 1,000.		
					Persons married.	Births.	Deaths.
1880*	166,444	1,599	5,227	2,437	19.2	31.4	14.6
1881	172,075	1,555	4,501	*2,229*	18.1	26.2	13.0
1882	177,705	1,576	5,099	2,454	17.7	28.7	13.8
1883	183,336	1,561	5,358	2,740	17.0	29.2	14.9
1884*	188,966	1,494	6,222	3,357	15.8	32.9	17.8
1885	200,324	1,506	6,561	3,522	15.0	32.8	17.6
1886	211,682	1,781	6,388	3,324	16.8	30.2	15.7
1887	223,040	2,009	*10,857*	3,543	18.0	*48.7*	15.9
1888	234,398	1,967	*14,046*	5,301	16.8	*59.9*	22.6
1889	245,756	1,922	*12,023*	4,005	15.6	*48.9*	16.3
1890*	257,114	2,266	*17,372*	5,505	17.6	*67.6*	21.4
1891	268,472	2,285	*13,632*	4,594	17.0	*50.8*	17.1
1892	279,830	2,540	8,779	3,722	18.2	31.4	13.3

* Census years.

The marriages in this table are collected in an entirely different manner from the births and deaths, and are probably very nearly correct. They thus furnish a certain criterion of the birth-rates and death-rates, since it is not probable that either of these would rise markedly for a series of years (no epidemic prevailing) without affecting marriages to some extent. The marriage-rates show great uniformity from 1881 to 1892, the range being only 3.4 per 1,000. This constancy practically excludes the supposition that any large increase of population occurred suddenly in any of these years.

The numbers of births returned and the birth-rates based thereon show, on the contrary, a sudden large increase for the year 1887 as compared with any previous year of registration, which increase is continued, with certain large and inexplicable fluctuations (so far as natural causes are concerned) for several years, ending with an abrupt fall from 13,632 births registered for 1891 to 8,779 registered for 1892. The latter was probably the most truthful return since 1886. This view is supported by the results of the immediate registration of births in Detroit since the city board of health undertook their collection in 1893, and by the number of births reported by the United States census for Detroit and Wayne county during the census year ending June 1, 1890. Of the 257,114 inhabitants of Wayne county in 1890, the city of Detroit contained 205,876. The number of births that occur in Detroit per annum, according to the results of actual registration for the last four months of 1893 and the early months of 1894 (a complete registration year has not been completed at this time) would not exceed 5,500. If the same rate obtained for the

POPULATION.

In order that comparisons may be made between the vital statistics of different years, it is necessary to reduce all returns of births, marriages and deaths to expressions proportioned to the number of the inhabitants that supplied them. The customary rates for gross mortality are those stating the number of births, deaths and persons married (twice the number of marriages) that occur yearly for every 1,000 living persons. As this ratio would afford figures inconveniently small when applied to statements of the mortality from individual causes of death, it is customary to employ rates per 10,000, 100,000 or 1,000,000 population for such purposes. In Part IV of this report the ratio 1:100,000 is used, it being very convenient and easily reducible (by changing the decimal point one place to the right or left) to rates per 10,000 or per 1,000,000,—the latter being the standard in the English reports.

The populations of Michigan as given for various years from 1810 to 1890 by the United States censuses, and also the results of the State census enumerations of 1854, 1864, 1874 and 1884, may be seen in Table 3. This table also shows the amount and per cent of increase during each decennium between National and State censuses, separately, and also the gain and per cent of gain of each four- and six-year period lying between adjacent National and State censuses.

From the year 1860 to the present time the decennial per cents of increase of population show a constant decrease. This has been the case, though with less uniformity, in nearly all of the northern central states as grouped in the Compendium of the Eleventh Census, Part I, p. 4. The group consists of Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska and Kansas, and shows for the four decades per cents of 68.35, 42.70, 33.76 and 28.78, the last being the rate of increase from 1880 to 1890. Michigan is thus seen to have shown a rate of increase (27.92 per cent) but very little below the average for the group, while it exceeds the rate for the United States as a whole (24.86 per cent) for the period 1880-90. Con

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remainder of the county as for Detroit, the entire number of births would be about 7,000. Data supplied from the United States census by Hon. Carroll D. Wright, Commissioner of Labor, in charge of the census (1894), are as follows:

	Detroit.	*Wayne Co., including Detroit.*
Living population under 1 year of age on June 1, 1890	5,443	6,770
Born and died during census year	720	779
Total births	6,163	7,549

"These figures give a birth-rate, per 1,000 of total population, of 29.94 for Detroit, and 27.05 for Wayne county exclusive of Detroit. They do not include still-births." The birth-rate for Wayne county, including Detroit, for the census year ending June 1, 1890, and based on the estimated population in the middle of that year, 251,435, would be 30.0 per 1,000.

The independent testimony of these extraneous sources of information, together with the internal evidence derived from a study of the variations of the returns for several years, agree in indicating that they have been seriously tampered with. As Wayne county contains over one-tenth of the entire population of the State, we find on examination that the numbers added for births, and possibly for deaths, although the latter do not appear to have been so recklessly sophisticated, are sufficient to very materially affect the rates for the entire State, and thus the labor of registration performed by the supervisors and assessors of the State for several years, is in some measure lost because of dishonesty in a single county. The enumeration of births and deaths for the city of Detroit is performed by persons appointed by the common council, and not responsible to the county clerk or to the State department for the faithful performance of their duties. It would be very desirable if the results of the immediate registration of vital statistics conducted by the city board of health could be utilized in the preparation of these reports, and the returns be made directly from the city board of health to this office, the special enumeration by common council appointees being dispensed with entirely.

In the table for Wayne county given in this note, the numbers and rates that seem especially untrustworthy are indicated by being printed in italics. An attempt is made in the text relating to Tables 5 to eliminate these sources of error and to state the probable numbers for the State as they should have been *returned* for the years 1887-91. This correction is entirely apart from that referred to elsewhere as necessary on account of the deficiency of the returns.

sidering the regular diminution of the numbers expressing the decennial rates of increase the question arises, whether some approximation to the probable rate for the present decade, 1890–1900, cannot be found. The numbers taken in order are so related that each one is very nearly the mean proportional of the two adjacent terms. Should this relation hold true for 1890–1900 the rate of increase would be about 20 per cent, or 2 per cent per annum, which number agrees well with the results obtained by assuming that the average annual increase of each year since 1890 is the same as the average annual increase of the preceding decade.

Table 3.—*Populations of Michigan by the decennial National censuses from 1810 to 1890 and by the decennial State censuses from 1854 to 1884; showing the amount and per cent of increase of population between National censuses, State censuses, and National and State censuses.*

National and State censuses.	Population.	Increase of population during each decade by National censuses.		Increase of population during each decade by State censuses.		Increase of population during four and six year periods by National and State censuses.	
		No.	Per ct.	Number.	Per cent.	Number.	Per cent.
National census of 1810	4,762	.....	.....	.....	.....	.....	.....
National census of 1820	8,765	4,003	84.06	.....	.....	.....	.....
National census of 1830	31,639	22,874	260.97	.....	.....	.....	.....
National census of 1840	212,267	180,628	570.90	.....	.....	.....	.....
National census of 1850	397,654	185,387	87.34	.....	.....	.....	.....
State census of 1854	509,374	.....	.....	.....	.....	111,720	28.09
National census of 1860	749,113	351,459	88.38	.....	.....	239,739	47.07
State census of 1864	803,745	.....	.....	294,371	57.79	54,632	7.29
National census of 1870	1,184,059	434,946	58.06	.....	.....	380,314	47.32
State census of 1874	1,334,031	.....	.....	530,286	65.98	149,972	12.67
National census of 1880	1,636,937	452,878	38.25	.....	.....	302,906	22.71
State census of 1884	1,853,658	.....	.....	519,627	38.95	216,721	13.24
National census of 1890	2,093,889	456,952	27.92	.....	.....	240,231	12.96

The estimation of populations for inter-census years is a very essential part of the preparation of any registration report. The errors that result from a failure to make such estimations, vital rates being computed on the basis of the last preceding census for inter-census years, are much larger as a rule than any errors incidental to the estimates themselves, if made with ordinary precaution. This is especially true when several years have elapsed since the last census was taken, in which case reference to that census as a basis of population may cause an apparent increase of several units per thousand in the vital rates computed. Illustrations of these statements may be seen in the exhibit on page 132 of the last report in the comparison between the "corrected death-rates" printed in the registration reports of successive years and the rates for the same number of estimated deaths after an allowance for yearly increase of population has been made.

Table 4.—*Showing the population of Michigan as estimated for inter-census years (a) by taking the average annual increase between United States censuses as the actual increase of each year, and (b) by assuming the increase from year to year to be in geometrical ratio.*

Years.	(a) By average annual increase.		(b) Geometric estimate.		Excess of average over geometrical estimate.
	Population.	−log.*	Population.	−log.*	
1868	1,097,070	.9598	1,080,500	.9664	16,600
1869	1,140,564	.9429	1,131,100	.9465	9,500
1870	1,184,059	.9266	1,184,059	.9266	----------
1871	1,229,347	.9103	1,223,000	.9126	6,300
1872	1,274,635	.8946	1,263,300	.8985	11,300
1873	1,319,922	.8794	1,305,000	.8844	14,900
1874	1,365,210	.8648	1,347,800	.8704	17,400
1875	1,410,498	.8507	1,392,200	.8563	18,300
1876	1,455,786	.8369	1,438,000	.8422	17,800
1877	1,501,074	.8236	1,485,400	.8282	15,700
1878	1,546,361	.8107	1,534,300	.8141	12,100
1879	1,591,649	.7982	1,585,100	.8000	6,500
1880	1,636,937	.7860	1,636,937	.7860	----------
1881	1,682,632	.7740	1,677,800	.7753	4,800
1882	1,782,327	.7624	1,719,600	.7646	8,700
1883	1,774,023	.7510	1,762,400	.7539	11,600
1884	1,819,718	.7400	1,806,300	.7432	13,400
1885	1,865,413	.7292	1,851,400	.7325	14,000
1886	1,911,108	.7187	1,897,600	.7218	13,500
1887	1,956,803	.7085	1,944,900	.7111	11,900
1888	2,002,499	.6984	1,993,300	.7004	9,200
1889	2,048,194	.6886	2,043,000	.6897	5,200
1890	2,093,889	.6790	2,093,889	.6790	----------
1891	2,139,584	.6697	2,145,900	.6684	−6,300
1892	2,185,279	.6605	2,199,500	.6577	−14,200
1893	2,230,975	.6515	2,254,400	.6470	−23,400
1894	2,276,670	.6427	2,310,600	.6363	−33,900

* Logarithms are conveniently used in computing series of vital rates, as, for example, the death-rates from various causes of death in a single year, or the rates from a single cause through a series of years. Formula: log. rate=log. number of deaths—log. population. In practice only the decimal part of the logarithms need be used, the proper pointing of the results being known from the general relations of the numbers. As log. population is always subtracted in computing a rate, it is convenient to subtract it beforehand from .0000 and *add* the difference to log. number of deaths. Such differences are given in this table. An example will illustrate the manner of use:—deaths in Michigan from diphtheria in *1886* were 1,117; log. 1,117=.0481; .0481+.7187=.7668=log. (5845) or 58.5 per 100,000 population of that year. Four-place logarithms are sufficiently accurate for all ordinary computations of vital rates and are much more convenient in use than six-place logarithms.

In Table 4 estimates of population for each year since the establishment of the State registration system are given. Two methods are employed, (a) that of using the average annual increase of each census decade as the estimated increase for each year of that decade; and (b) the usually employed formula that assumes an increase of population in geometrical ratio from year to year. The first method is believed to give more satisfactory results for this State at present, and is accordingly used in the calculation of all the rates in the present report. Some of the reasons leading to this choice of methods may be briefly referred to, as stated in the last report (pp. 7–8):

> Between the average annual increments for different decades, as taken from the results of the United States censuses, there exists great uniformity. The average annual increase for 1871–80 is only 407 less than that for 1881–90. Indeed, the average of the thirty years 1861–90 is 44,825 or very nearly that of the last decade of this period. It would seem from this to be very clearly indicated that the population of the State as a whole is increasing at present by very nearly the same number every year, and that any populations estimated by the extension of the observed amount of increase a short period into the future, can be but slightly in error.
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> The geometrical rate of increase has constantly decreased, being 6.54 per cent for 1850–60, 4.69 per cent for 1860–70, 3.29 per cent for 1870–80, and 2.49 per cent for 1880–90. It will probably not be far from 2 per cent during the present decade. The population of 1891, estimated by adding the average annual increase of the period 1880–90, corresponds to an increase of 2.14 per cent over that of 1890. Thus estimates by either method would be practically identical. For this reason, and also because the population of the first and last years of adjacent census decades would show considerable differences, leading to unwarranted variations in the vital rates computed on them, it was not thought advisable to employ any geometrical estimates of population. The conditions of growth in the State are dependent on other factors than simple natural increase. The absolute increase for ten years, 1870–80, based on a population of 1,184,059, was very nearly as great as that for the period 1880–90, which had an initial population of 1,636,937. This is entirely contrary to the assumption that the amount of increase is proportional to population, and justifies the belief that the average annual increase is closer to the actual increase for each year.

If, however, it be desired to employ the more commonly accepted method for any purpose, the numbers given in the second column will, it is believed, be found accurate. The difference (excess) lies as a rule on the side of the average annual increase, so that the rates as calculated thereon are a little lower than the geometrical rates. The maximum difference occurs in those years most remote from the census years, and, for 1875 as an example, amounted to 18,300. For 10 deaths the following rates per 100,000 would be obtained for that year: (a) .7; (b) .7. For 100 deaths, (a) 7.1; (b) 7.2. For 1,000 deaths, (a) 70.9 and (b) 71.8. There were 11,990 deaths registered for that year. The rates per 1,000 population would be (a) 8.5 and (b) 8.6. These differences lie far within the limits of accuracy warranted by the general character of the returns.

For the years 1891–94 the numbers obtained by using the coefficient of geometrical increase belonging to the previous decade, 1880–90, are evidently too high. The rate of annual increase obtained by estimating the probable increase for the next decade at about 20 per cent, or an annual rate of 1.84 per cent, would give better results. The State census of 1894, which is being taken as this report is going through the press, will be of use in correcting the estimates for the years since 1890. As shown in the last report, comparison of the National and State censuses has not been satisfactory hitherto as regards the establishment of a connected series of vital rates. By the time of the appearance of the next registration report, however, the results of the census of 1894 will be available, and by careful study of them in connection with the censuses of 1880, 1884 and 1890, important facts may probably be ascertained not only in regard to the total increase of population in this State, but also in regard to the changes going on in the age-constitution of the people, variations in sex and nativity, etc., subjects of the greatest interest to the student of the vital statistics of this State.

Table 5.—*Number of marriages, births and deaths registered in Michigan from 1867 to 1892, with the excess of births over deaths for each year; also the rates per thousand of persons married, births, deaths and excess of births over deaths for each year based on populations of United States censuses and estimated populations for inter-census years. Averages for the quinquennial periods 1871–75, 1876–80, 1881–85, 1886–90. (Still-births included in both births and deaths.)*

Years.	Populati'n.	Michigan registration returns, 1867-92.				Rates per thousand of population.			
		Number of marriages.	Number of births.	Number of deaths.	Excess of births over deaths.	Persons married.	Births.	Deaths.	Excess of births over deaths.
1867*	1,053,574	4,312	14,000	4,409	9,591	.....	.....	.....	.....
1868	1,097,070	8,697	25,020	8,235	16,785	15.9	22.8	7.5	15.3
1869	1,140,564	8,459	27,093	9,145	17,948	14.8	23.8	8.0	15.8
1870	1,184,059	9,791	26,663	10,766	15,897	16.5	22.5	9.1	13.4
1871	1,229,347	10,605	25,992	9,728	16,264	17.3	21.1	7.9	13.2
1872	1,274,635	10,752	27,993	13,371	14,622	16.9	22.0	10.5	11.5
1873	1,319,922	11,897	34,608	14,258	20,350	18.0	26.2	10.8	15.4
1874	1,365,210	12,255	31,151	12,500	18,651	18.0	22.8	9.2	13.6
1875	1,410,498	11,851	31,958	11,990	19,968	17.4	22.7	8.5	14.2
Av. 1871-75	1,319,922	11,472	30,340	12,369	17,971	17.4	23.0	9.4	13.6
1876	1,455,786	11,913	34,235	12,576	21,659	16.4	23.5	8.6	14.9
1877	1,501,074	11,899	33,395	12,919	20,476	15.9	22.2	8.6	13.6
1878	1,546,361	12,880	35,162	12,766	22,396	16.7	22.7	8.3	14.4
1879	1,591,649	13,892	34,122	14,407	19,715	17.5	21.4	9.1	12.3
1880	1,636,937	14,935	35,323	16,102	19,221	18.2	21.6	9.8	11.8
Av. 1876-80	1,546,361	13,104	34,447	13,754	20,693	16.9	22.3	8.9	13.4
1881	1,682,632	15,894	34,749	19,238	15,511	18.9	20.7	11.4	9.3
1882	1,728,327	16,880	37,026	16,425	20,601	19.5	21.4	9.5	11.9
1883	1,774,023	17,174	40,809	16,906	23,903	19.4	23.0	9.5	13.5
1884	1,819,718	15,989	40,408	18,056	22,352	17.6	22.2	9.9	12.3
1885	1,865,413	15,885	42,119	16,646	25,473	17.0	22.6	8.9	13.7
Av. 1881-85	1,774,023	16,354	39,022	17,454	21,568	18.4	22.0	9.8	12.2
1886	1,911,108	16,665	41,095	18,187	22,908	17.4	21.5	9.5	12.0
1887	1,956,803	17,179	46,226	19,482	26,744	17.6	23.6	10.0	13.6
1888	2,002,499	17,297	48,952	21,764	27,188	17.3	24.4	10.9	13.5
1889	2,048,194	18,317	49,272	20,315	28,957	17.9	24.1	9.9	14.2
1890	2,093,889	18,664	52,306	21,642	30,664	17.8	25.0	10.3	14.7
Av. 1886-90	2,002,499	17,624	47,570	20,278	27,292	17.1	23.8	10.1	13.7
1891	2,139,584	19,244	50,812	22,079	28,733	18.0	23.7	10.3	13.4
1892	2,185,279	20,107	46,221	21,729	24,492	18.4	21.2	9.9	11.3

* Includes only April 5 to December 31, 1867. This was the first year of State registration, and the returns are not comparable with later years when the system was fully established.

In Table 5 the comparison of registration returns and population is made for each year from 1868 to 1892. Five-year averages are also introduced into this table in the present report, by means of which the tendencies of registration may be more readily observed. The marriage-rates are fairly satisfactory and represent very nearly the actual number of marriages that have occurred in each year of registration. The rates given for births and deaths are very much below the true figures, and should be increased by probably at least 60 per cent to represent the actual birth-rates and death-rates of Michigan. Nevertheless, with the exception of certain irregularities due to fraudulent returns, it is believed that the rates as given in this table may be taken as representative of the *variations* in vital rates from year to year, and thus interesting comparisons are admissible with the *fluctuations* of the birth-rates and death-rates of other States and countries. Any direct comparison of the rates given for Michigan with those obtained where an efficient system of registration exists, is quite out of the question.

The irregularities in the returns from Wayne county, which have been alluded to in discussing Table 2, affect the birth-rates, and to a lesser degree the death-rates, for the years from 1887 to 1891 inclusive. It is impossible to exactly determine the number of these fraudulent returns for each year, but on the assumption that the returns from Wayne county should have been fairly uniform for each year from 1886 to 1892, a deduction can be made in the total number of births and deaths returned in those years for the county and for the State that will probably lead to more correct conclusions when comparisons of the rates based thereon are made with previous years. We shall have, instead of the numbers given in the table, the following estimates for the years 1887-91:—

	1887.	1888.	1889.	1890.	1891.
Number of births	42,156	42,091	44,833	42,916	45,561
Birth-rate per 1,000	21.5	21.0	21.9	20.5	21.3
Number of deaths	19,329	19,919	19,833	19,726	21,141
Death-rate per 1,000	9.9	9.9	9.7	9.4	9.9

The average birth-rate for the five-year period 1886-90 would be 21.3 instead of 23.8; the average death-rate 9.7 instead of 10.1; the rate of natural increase, 11.6 per 1,000, not 13.6. The series of birth-rates as altered appears more reasonable than before, there being a decrease in the birth-rate of every State in this country, with only four unimportant exceptions, during the decade 1880-90 as determined by the United States censuses. As printed in the report for last year, and as given in Table 5 of the present report (it being thought unadvisable to change the showing made by the actual returns in that table) the birth-rates for Michigan are quite anomalous, a marked rise being shown. The birth-rate of the State in 1880 by the United States census was 28.0 per 1,000; in 1890 it was 24.8 per 1,000, a fall of 3.2 per 1,000. The birth-rates of 1890 and 1880 as taken from Table 5 show a rise of 3.4 per 1,000; reasonable deduction for fraudulent returns being made, a fall of 1.1 per 1,000 is indicated, a much more probable statement.

Vital rates for census years of both United States and State censuses are given in Table 6. The number of births and deaths are those collected by the census enumerators, and will be found a little in excess of the registration returns for the corresponding years, there being no interval after the close of the year for which the enumeration is made and the work of enumeration in the case of the census as in the supervisors' registration returns. The lapse of four months causes a deficiency of about 25 per

cent in the registration returns as compared with the census returns. The census returns, however, are much too low to adequately represent the true natality or mortality of the State. We have at present no means of knowing exactly what the death-rate of the State is,—it lies probably between the limits 16.5 and 17.5 per 1,000.

Table 6.—*Births, deaths, and natural increase in Michigan, with rates per thousand population, according to the United States censuses of 1870, 1880 and 1890, and the State censuses of 1874 and 1884. (Still-births included.)*

Years.	Population.	Census returns.			Rates per 1,000 population.		
		Births.	Deaths.	Natural increase.	Births.	Deaths.	Natural increase.
National census of 1870	1,184,059	34,530	11,181	23,349	29.2	9.4	19.8
State census of 1874	1,334,031	.....	* 14,280	.....	.....	10.7	.....
National census of 1880	1,636,937	45,848	19,748	26,100	28.0	12.1	15.9
State census of 1884	1,853,658	53,775	19,979	33,796	29.0	10.7	18.3
National census of 1890	2,093,889	51,931	25,016	26,915	24.8	11.9	12.9

* For the calendar year 1873.

In Tables 7, 8 and 9 the marriage-, birth- and death-rates of certain European countries during the years 1880–92 are presented for comparison. The authority is the last English Registrar-General's report. The birth-rates and death-rates for Japan are from the *Sei-i-kwai Medical Journal*, January, 1892. There are also given rates for a few States in this country,—the only ones presenting a connected series of the rates in question for successive years in their registration reports. Those for Massachusetts are taken from a "Standard Table" kindly supplied by Dr. S. W. Abbott, Secretary of the State Board of Health, and are carefully computed to estimated populations for inter-census years. The data for Connecticut and Rhode Island are from the latest registration reports. It cannot be too strongly urged upon the authorities in charge of the preparation of a registration report, that their first duty, after the proper presentation of the primary tables, is to present a connected statement of the numbers of births, marriages (and divorces) and deaths that have occurred in the state or city during the successive years of registration, together with a comparison of such numbers to the numbers of inhabitants in each year. The population will require estimation for the period lying between censuses, and the method by which such estimate is made should be uniform and should always be stated. It should also be stated whether still-births are included or excluded in births and deaths. It would be preferable for some reasons to exclude them uniformly from births and deaths, but to provide a separate column showing the number of still-births returned and the still-birth-rate for each year in convenient form for addition to either the birth-rate or death-rate as may be desired for special purposes.

It is customary in comparing marriage-rates to employ the ratios of persons married, i. e., double the number of marriages, to population, and in Table 7 the figures represent such rates. It will be noted that Michigan has a higher marriage-rate per 1,000 population than any of the European countries except Hungary in certain years. Massachusetts and Rhode Island show generally a slightly higher rate than Michigan. For 1892 the rates were respectively 18.99, 19.1 and 18.4. It is very satisfactory to know

that the statistics of marriages in Michigan creditably represent the State, and that direct comparisons can be made between them and the statistics of other States and countries without appreciable error. They are the only vital statistics in Michigan subject to *immediate registration*—an essential feature in the accurate collection of all vital data—and stand in sharp contrast to the defective and misleading (unless proper allowance be made) birth-rates and death-rates given for the State by the present system of registration of births and deaths.

Table 7.—*Persons married per 1,000 living population in certain countries and states during the years 1880–92.*

Country or State.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
Austria	15.3	16.0	16.4	15.7	15.7	15.2	15.6	15.6	15.8	15.0	15.1	15.4	15.6
Belgium	14.1	14.1	13.9	13.5	13.5	13.6	13.4	14.2	14.2	14.5	14.5	14.8	15.4
Denmark	15.2	15.6	15.4	15.4	15.6	15.1	14.2	14.0	14.2	14.2	13.8	13.6	13.6
France	14.9	15.0	14.8	15.0	15.3	14.9	14.8	14.5	14.4	14.2	14.0	15.0	15.2
German Empire	15.0	14.9	15.3	15.3	15.7	15.8	15.8	15.6	15.6	16.0	16.1	16.1	15.9
Prussia	15.3	15.3	15.8	15.9	16.2	16.4	16.2	16.0	16.0	16.3	16.4	16.3	16.1
Holland	15.0	14.6	14.3	14.2	14.4	13.9	13.9	14.0	13.8	13.9	14.2	14.2	14.4
Hungary	18.3	19.9	20.6	20.9	20.6	20.0	19.3	17.9	18.7	16.3	16.4	17.2	.....
Italy	13.9	16.2	15.6	16.1	16.5	16.0	15.9	15.9	15.9	15.4	14.7	15.0	15.0
Norway	13.3	12.8	13.4	13.2	13.7	13.3	13.0	12.5	12.2	12.5	13.0	13.2	12.6
Sweden	12.6	12.4	12.7	12.9	13.1	13.3	12.8	12.5	11.8	12.0	12.0	11.6	.....
Switzerland	13.7	13.6	13.6	13.7	13.8	13.9	13.8	14.2	14.1	14.1	14.1	14.3	14.7
United Kingdom	13.6	14.0	14.4	14.4	14.1	13.6	13.3	13.5	13.5	14.1	14.5	14.6	14.5
England and Wales	14.9	15.1	15.5	15.5	15.1	14.5	14.2	14.4	14.4	15.0	15.5	15.6	15.4
Ireland	7.8	8.5	8.6	8.5	9.1	8.6	8.4	8.6	8.4	9.0	8.9	9.2	9.3
Scotland	13.2	13.9	14.1	14.1	13.6	13.1	12.6	12.7	12.8	13.3	13.7	13.9	14.1
United States:													
Massachusetts	17.4	18.5	19.2	19.4	18.2	17.6	18.0	19.0	18.7	18.7	18.6	18.8	19.0
Michigan	18.2	18.9	19.5	19.4	17.6	17.0	17.4	17.6	17.3	17.9	17.8	18.0	18.4
Rhode Island	20.0	19.9	19.0	18.3	17.2	16.3	17.7	18.0	18.7	17.3	18.4	18.5	19.1

Table 8 is of more service in illustrating the trend of natality, the changes in the proportions of births to population, in Europe and this country than for any direct comparisons permissible between the rates given for Michigan and those of other States or countries. The reason for this is the large deficiency in the number of births returned in this State under the present registration law. It is estimated that not more than 60 per cent of the births and deaths that actually occur in the State are returned to the registration office, and consequently the vital rates derived from these returns are much below the truth. For one purpose, however, the uncorrected Michigan rates are useful, and that is to indicate the fluctuations that have occurred from year to year. It is evident that very imperfect rates may serve for this purpose, if only the defective returns bear about the same proportion to the actual number

that occurred from year to year. This may be fairly assumed to be the case, except that for births (to a lesser degree for deaths) the returns for the years 1887–91 were unwarrantably increased by the addition of a large number of fictitious entries from the county of Wayne (Detroit). In the rates given in Table 8, the error arising from this cause has been eliminated, so far as a study of the probable increase of births in that county from 1886 to 1892 will permit, and the rates also differ from those given in Table 5 by the omission of still-births. Although still-births have claims to be included in the total number of births (and also of deaths), the facts that they are not a factor in the natural increase of population, that their exact registration is attended with peculiar difficulties, and that they are omitted in the leading vital statistics reports from both births and deaths, render their omission necessary for purposes of comparison. (It may be said in general that they are included in all other tables of births and deaths in the present and in all preceding Michigan registration reports.)

The birth-rates given in Table 8 for some of the more important countries of Europe are illustrated and compared with the changes in the United States as a whole in Diagram II (Part II), in connection with an abstract of a suggestive article by Dr. Billings, Superintendent of the Vital Statistics of the Eleventh Census, on the "Diminution of the Birth-rate in the United States."

Table 8.—*Births registered per 1,000 living population in certain countries and States during the years 1880–92. (Still-births excluded.)*

Country or State.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
Austria	38.0	37.7	39.1	38.2	38.4	37.4	38.0	38.2	37.9	37.9	36.7	38.1	36.2
Belgium	31.1	31.4	31.2	30.5	30.5	29.9	29.6	29.4	29.1	29.5	25.7	29.6	28.9
Denmark	31.8	32.3	32.4	31.8	33.4	32.6	32.6	32.0	31.7	31.3	30.6	31.0	29.5
France	24.5	24.9	24.8	24.8	24.8	24.2	23.9	23.5	23.1	23.0	21.8	22.6	22.1
German Empire	37.6	37.0	37.2	36.6	37.2	37.0	37.0	36.9	36.6	36.4	35.7	37.0	35.7
Prussia	37.8	37.0	37.6	37.1	37.6	37.8	37.7	37.6	37.4	37.1	36.6	37.7	36.3
Holland	35.5	35.0	35.3	34.3	34.9	34.4	34.6	33.7	33.7	33.2	32.9	33.7	32.0
Hungary	42.8	42.9	43.8	44.7	45.6	44.7	45.5	44.1	43.8	43.7	40.3	42.3	.....
Italy	33.9	38.0	37.0	32.7	39.0	38.5	37.0	39.0	37.6	38.4	35.9	37.3	36.3
Japan	24.0	25.6	24.9	26.4	27.8	26.9	27.3	27.1	29.6	30.2	.....	.....	.....
Norway	30.7	30.0	30.9	30.9	31.0	31.3	30.9	30.8	30.8	29.7	30.3	30.9	29.6
Sweden	29.4	29.1	29.4	28.9	30.0	29.4	29.8	29.7	28.8	27.7	28.0	28.3	.....
Switzerland	29.6	29.8	28.9	28.5	28.3	27.7	27.8	27.9	27.7	27.6	26.6	28.2	28.0
United Kingdom	32.7	32.5	32.3	32.0	32.2	31.6	31.5	30.7	30.1	30.0	29.2	30.4	29.5
England and Wales	34.2	33.9	33.8	33.5	33.6	32.9	32.8	31.9	31.2	31.1	30.2	31.4	30.5
Ireland	24.7	24.5	24.4	23.5	23.9	23.5	23.2	23.1	22.8	22.7	22.3	23.1	22.4
Scotland	33.6	33.7	33.4	32.7	33.7	32.7	32.9	31.8	31.3	30.9	30.2	31.2	30.7
United States	31.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	26.7	.....	.....
Connecticut	22.2	22.4	23.9	25.4	23.0	22.7	22.2	22.8	22.2	23.4	23.3	24.8	24.7
Massachusetts	24.8	24.9	24.8	25.2	25.5	25.1	25.4	25.9	26.0	26.2	25.8	27.4	27.8
Michigan	21.1	20.2	20.3	22.5	21.7	22.0	21.0	21.1	20.3	21.3	19.8	20.8	20.7

Table 9.—*Deaths registered per 1,000 living population in certain countries and States during the years 1880-92. (Still-births excluded.)*

Country or State.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
Austria	29.8	30.6	30.8	30.1	29.4	30.1	29.4	28.9	29.2	27.3	29.4	27.9	28.8
Belgium	22.3	20.9	20.2	20.8	20.9	20.1	21.1	19.3	20.1	19.1	20.6	21.0	21.8
Denmark	20.4	18.3	19.3	18.4	18.4	17.9	18.2	18.3	19.7	18.6	19.0	20.0	19.4
France	22.8	22.0	22.2	22.2	22.2	21.9	22.5	22.0	21.8	20.5	22.6	22.6	22.6
German Empire	26.0	25.5	25.7	25.9	26.0	25.7	26.2	24.2	23.7	23.7	24.4	23.4	24.1
Prussia	25.5	24.9	25.4	25.6	25.7	25.4	26.1	23.8	22.8	23.2	24.1	22.9	23.4
Holland	23.5	21.5	20.7	21.8	22.2	21.0	21.8	19.7	20.4	20.1	20.5	20.7	21.0
Hungary	37.1	34.4	35.3	32.1	31.0	31.8	31.6	33.7	32.0	29.8	32.3	33.1	.....
Italy	30.8	27.6	27.5	27.5	26.9	27.0	28.7	28.0	27.6	25.6	26.4	26.2	26.2
Japan	16.4	18.7	18.1	17.7	18.5	22.7	24.6	19.3	19.1	20.4	.....	.....	.....
Norway	15.9	16.8	13.4	17.1	16.4	16.5	16.1	16.0	16.9	17.4	17.9	17.5	17.7
Sweden	18.1	17.7	17.4	17.3	17.5	17.8	16.6	16.1	16.0	16.0	17.1	16.8	.....
Switzerland	21.9	22.4	21.9	20.4	20.2	21.3	20.7	20.2	19.9	20.3	20.9	20.8	19.3
United Kingdom	20.4	18.7	19.3	19.6	19.4	19.1	19.2	19.0	18.1	18.1	19.4	20.0	19.0
England and Wales	20.5	18.9	19.6	19.6	19.7	19.2	19.5	19.1	18.1	18.2	19.5	20.2	19.0
Ireland	19.8	17.5	17.3	19.2	17.5	18.4	17.8	18.2	17.9	17.4	18.2	18.4	19.4
Scotland	20.5	19.3	19.4	20.2	19.6	19.3	18.9	19.0	18.0	18.4	19.7	20.7	18.5
United States	15.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	14.0	.....	.....
Connecticut	16.7	17.4	18.7	19.1	16.6	17.6	16.2	17.0	17.1	17.0	18.3	19.2	19.0
Massachusetts	19.8	20.1	19.9	20.1	19.4	19.6	18.6	19.9	19.9	19.2	19.4	19.6	20.6
Michigan	9.4	11.0	9.0	9.0	9.4	8.4	9.0	9.5	10.2	9.3	9.7	9.8	9.5
Rhode Island	17.5	18.1	18.4	19.1	16.1	17.7	18.8	19.9	20.4	19.0	20.1	18.6	20.1

The first step in the study of the mortality statistics of a State or country is to learn the total, gross or crude death-rate, i. e., the rate per 1,000 of deaths from all causes, at all ages, and of both sexes, to the total population comprising all of these elements. For purposes of internal comparison such rates, assuming the age and sex constitution of the community in question to remain fairly constant, do very well, and by their use the vital rates of successive years may be compared with excellent results. When, however, the statistics of one State or country are to be compared with those of another, it immediately becomes necessary to know in what manner the populations and the vital facts registered are distributed as regards age and sex in order to properly interpret the results. Infants, children under five years of age, and persons of sixty years and upwards show a much greater death-rate per unit of the same class of the population than children over five years, young adults and the middle-aged. At all ages, except the child-bearing period, females show a lower death-rate than males. It is evident, then, that a State into which there was a large immigration of young adults at the healthiest period of life would tend to show a low death-rate; this, however, might be influenced in the reverse direction by the existence of a high birth-rate, causing the presence of an unusually large number of children at years most

susceptible to disease. The contrary condition would occur when young and middle-aged adults emigrated in large numbers, as from Ireland, leaving the aged and infirm to supply a high death-rate. The balancing condition in this case is afforded by the low Irish birth-rate and the consequently small number of children under five, so that the actual death-rate of Ireland is generally lower than that of the United Kingdom.

Practically, however, in spite of the serious misconceptions that may arise from comparing crude vital rates, we have to use these or none, as there are no fixed standards for comparison of the rates of even European countries. The Registrar-General of England, in his last report, says:—

"In previous reports it has been pointed out that as the sex and age distribution of the population varies greatly in different countries, and as the rates largely depend on such distribution, the rates in one country cannot safely be compared with the rates in another, without correction for this difference in the constitution of the several populations.

"In order to allow of fair comparison, it is most desirable that the several countries should agree upon some 'Standard or Life Table population,' that is to say, a population with fixed age and sex distribution, for international use; so that the birth-, marriage- and death-rates for each country may be calculated by this standard. I recommend this suggestion to the notice of the respective governments."

In Part IV of this report, the mortality rates for the principal European countries, and also for such States of this country as have registration systems, are illustrated by a diagram, in which the great differences that exist between many of them are well shown. These differences must not be presumed to be due to differences in actual healthfulness or sanitary efficiency until the factors of sex and age distribution, relative birth-rates, etc., have been properly dealt with. As affecting the rates given for many of the States of this country, defects of the registration systems bear a more prominent place in depressing the recorded death-rates than any of the above, and hence must be considered in discussing nearly all American vital rates.*

Study of Table 10 shows more clearly the nature of the deficiency of the registration returns of births and deaths than it does its original object,—the relation of the several months of the year to each other as regards natural increase of population. Taking the births or deaths of any year, a fairly uniform increase is observed in passing from January to December. The births or deaths in December of any year are always largely in excess of the numbers recorded for the first month (January) of the following registration year. It is needless to point out to any one versed in vital statistics, or to any accurate observer of the births or deaths recorded by immediate registry in those cities of the State where such a system is in operation, that this curious showing is entirely fallacious in point of fact. We have no reliable evidence in the State registration to show whether the early or latter months of the year actually exceed in the number of children born or in the number of deaths that occur in them. It is probably true, as shown by the city registries, the State Board of health sickness statistics (assuming sickness to proceed *pari passu* with mortality), and the evidence of the State census of 1884, the last census for which a statement of deaths by months in Michigan was presented, that the mortality in this State is greater for the month of January than for the month of December. January and December are extreme cases; the other months are affected relatively in different degrees, but, except for adjacent months in the same year or for the same months in different years, comparisons should be made very cautiously.

* In a NOTE at the end of Part I (p. 34), some vital statistics of the Australian Colonies are presented. They are of interest in comparison with the vital rates of America and Europe given in Tables 7, 8 and 9.

In Table 4 estimates of population for each year since the establishment of the State registration system are given. Two methods are employed, (a) that of using the average annual increase of each census decade as the estimated increase for each year of that decade; and (b) the usually employed formula that assumes an increase of population in geometrical ratio from year to year. The first method is believed to give more satisfactory results for this State at present, and is accordingly used in the calculation of all the rates in the present report. Some of the reasons leading to this choice of methods may be briefly referred to, as stated in the last report (pp. 7–8):

> Between the average annual increments for different decades, as taken from the results of the United States censuses, there exists great uniformity. The average annual increase for 1871–80 is only 407 less than that for 1881-90. Indeed, the average of the thirty years 1861-90 is 44,825 or very nearly that of the last decade of this period. It would seem from this to be very clearly indicated that the population of the State as a whole is increasing at present by very nearly the same number every year, and that any populations estimated by the extension of the observed amount of increase a short period into the future, can be but slightly in error.
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> The geometrical rate of increase has constantly decreased, being 6.54 per cent for 1850–60, 4.69 per cent for 1860–70, 3.29 per cent for 1870–80, and 2.49 per cent for 1880–90. It will probably not be far from 2 per cent during the present decade. The population of 1891, estimated by adding the average annual increase of the period 1880–90, corresponds to an increase of 2.14 per cent over that of 1890. Thus estimates by either method would be practically identical. For this reason, and also because the population of the first and last years of adjacent census decades would show considerable differences, leading to unwarranted variations in the vital rates computed on them, it was not thought advisable to employ any geometrical estimates of population. The conditions of growth in the State are dependent on other factors than simple natural increase. The absolute increase for ten years, 1870–80, based on a population of 1,184,059, was very nearly as great as that for the period 1880–90, which had an initial population of 1,636,937. This is entirely contrary to the assumption that the amount of increase is proportional to population, and justifies the belief that the average annual increase is closer to the actual increase for each year.

If, however, it be desired to employ the more commonly accepted method for any purpose, the numbers given in the second column will, it is believed, be found accurate. The difference (excess) lies as a rule on the side of the average annual increase, so that the rates as calculated thereon are a little lower than the geometrical rates. The maximum difference occurs in those years most remote from the census years, and, for 1875 as an example, amounted to 18,300. For 10 deaths the following rates per 100,000 would be obtained for that year: (a) .7; (b) .7. For 100 deaths, (a) 7.1; (b) 7.2. For 1,000 deaths, (a) 70.9 and (b) 71.8. There were 11,990 deaths registered for that year. The rates per 1,000 population would be (a) 8.5 and (b) 8.6. These differences lie far within the limits of accuracy warranted by the general character of the returns.

For the years 1891–94 the numbers obtained by using the coefficient of geometrical increase belonging to the previous decade, 1880–90, are evidently too high. The rate of annual increase obtained by estimating the probable increase for the next decade at about 20 per cent, or an annual rate of 1.84 per cent, would give better results. The State census of 1894, which is being taken as this report is going through the press, will be of use in correcting the estimates for the years since 1890. As shown in the last report, comparison of the National and State censuses has not been satisfactory hitherto as regards the establishment of a connected series of vital rates. By the time of the appearance of the next registration report, however, the results of the census of 1894 will be available, and by careful study of them in connection with the censuses of 1880, 1884 and 1890, important facts may probably be ascertained not only in regard to the total increase of population in this State, but also in regard to the changes going on in the age-constitution of the people, variations in sex and nativity, etc., subjects of the greatest interest to the student of the vital statistics of this State.

Table 5.—*Number of marriages, births and deaths registered in Michigan from 1867 to 1892, with the excess of births over deaths for each year; also the rates per thousand of persons married, births, deaths and excess of births over deaths for each year based on populations of United States censuses and estimated populations for inter-census years. Averages for the quinquennial periods 1871–75, 1876–80, 1881–85, 1886–90. (Still-births included in both births and deaths.)*

Years.	Populati'n.	Michigan registration returns, 1867-92.				Rates per thousand of population.			
		Number of marriages.	Number of births.	Number of deaths.	Excess of births over deaths.	Persons married.	Births.	Deaths.	Excess of births over deaths.
1867*.....	1,053,574	4,312	14,000	4,409	9,591	.....	.....	.....	.....
1868.....	1,097,070	8,697	25,020	8,235	16,785	15.9	22.8	7.5	15.3
1869.....	1,140,564	8,459	27,093	9,145	17,948	14.8	23.8	8.0	15.8
1870.....	1,184,059	9,791	26,663	10,766	15,897	16.5	22.5	9.1	13.4
1871.....	1,229,347	10,605	25,992	9,728	16,264	17.3	21.1	7.9	13.2
1872.....	1,274,635	10,752	27,993	13,371	14,622	16.9	22.0	10.5	11.5
1873.....	1,319,922	11,897	34,608	14,258	20,350	18.0	26.2	10.8	15.4
1874.....	1,365,210	12,255	31,151	12,500	18,651	18.0	22.8	9.2	13.6
1875.....	1,410,498	11,851	31,958	11,990	19,968	17.4	22.7	8.5	14.2
Av. 1871-75	**1,319,922**	**11,472**	**30,340**	**12,369**	**17,971**	**17.4**	**23.0**	**9.4**	**13.6**
1876.....	1,455,786	11,913	34,235	12,576	21,659	16.4	23.5	8.6	14.9
1877.....	1,501,074	11,899	33,395	12,919	20,476	15.9	22.2	8.6	13.6
1878.....	1,546,361	12,880	35,162	12,766	22,396	16.7	22.7	8.3	14.4
1879.....	1,591,649	13,892	34,122	14,407	19,715	17.5	21.4	9.1	12.3
1880.....	1,636,937	14,935	35,323	16,102	19,221	18.2	21.6	9.8	11.8
Av. 1876-80	**1,546,361**	**13,104**	**34,447**	**13,754**	**20,693**	**16.9**	**22.3**	**8.9**	**13.4**
1881.....	1,682,632	15,894	34,749	19,238	15,511	18.9	20.7	11.4	9.3
1882.....	1,728,327	16,830	37,026	16,425	20,601	19.5	21.4	9.5	11.9
1883.....	1,774,023	17,174	40,809	16,906	23,903	19.4	23.0	9.5	13.5
1884.....	1,819,718	15,989	40,408	18,056	22,352	17.6	22.2	9.9	12.3
1885.....	1,865,413	15,885	42,119	16,646	25,473	17.0	22.6	8.9	13.7
Av. 1881-85	**1,774,023**	**16,354**	**39,022**	**17,454**	**21,568**	**18.4**	**22.0**	**9.8**	**12.2**
1886.....	1,911,108	16,665	41,095	18,187	22,908	17.4	21.5	9.5	12.0
1887.....	1,956,803	17,179	46,226	19,482	26,744	17.6	23.6	10.0	13.6
1888.....	2,002,499	17,297	48,952	21,764	27,188	17.3	24.4	10.9	13.5
1889.....	2,048,194	18,317	49,272	20,315	28,957	17.9	24.1	9.9	14.2
1890.....	2,093,889	18,664	52,306	21,642	30,664	17.8	25.0	10.3	14.7
Av. 1886-90	**2,002,499**	**17,624**	**47,570**	**20,278**	**27,292**	**17.1**	**23.8**	**10.1**	**13.7**
1891.....	2,139,584	19,244	50,812	22,079	28,733	18.0	23.7	10.3	13.4
1892.....	2,185,279	20,107	46,221	21,729	24,492	18.4	21.2	9.9	11.3

* Includes only April 5 to December 31, 1867. This was the first year of State registration, and the returns are not comparable with later years when the system was fully established.

In Table 5 the comparison of registration returns and population is made for each year from 1868 to 1892. Five-year averages are also introduced into this table in the present report, by means of which the tendencies of registration may be more readily observed. The marriage-rates are fairly satisfactory and represent very nearly the actual number of marriages that have occurred in each year of registration. The rates given for births and deaths are very much below the true figures, and should be increased by probably at least 60 per cent to represent the actual birth-rates and death-rates of Michigan. Nevertheless, with the exception of certain irregularities due to fraudulent returns, it is believed that the rates as given in this table may be taken as representative of the *variations* in vital rates from year to year, and thus interesting comparisons are admissible with the *fluctuations* of the birth-rates and death-rates of other States and countries. Any direct comparison of the rates given for Michigan with those obtained where an efficient system of registration exists, is quite out of the question.

The irregularities in the returns from Wayne county, which have been alluded to in discussing Table 2, affect the birth-rates, and to a lesser degree the death-rates, for the years from 1887 to 1891 inclusive. It is impossible to exactly determine the number of these fraudulent returns for each year, but on the assumption that the returns from Wayne county should have been fairly uniform for each year from 1886 to 1892, a deduction can be made in the total number of births and deaths returned in those years for the county and for the State that will probably lead to more correct conclusions when comparisons of the rates based thereon are made with previous years. We shall have, instead of the numbers given in the table, the following estimates for the years 1887-91:—

	1887.	1888.	1889.	1890.	1891.
Number of births	42,156	42,091	44,833	42,916	45,561
Birth-rate per 1,000	21.5	21.0	21.9	20.5	21.3
Number of deaths	19,329	19,919	19,833	19,726	21,141
Death-rate per 1,000	9.9	9.9	9.7	9.4	9.9

The average birth-rate for the five-year period 1886-90 would be 21.3 instead of 23.8; the average death-rate 9.7 instead of 10.1; the rate of natural increase, 11.6 per 1,000, not 13.6. The series of birth-rates as altered appears more reasonable than before, there being a decrease in the birth-rate of every State in this country, with only four unimportant exceptions, during the decade 1880-90 as determined by the United States censuses. As printed in the report for last year, and as given in Table 5 of the present report (it being thought unadvisable to change the showing made by the actual returns in that table) the birth-rates for Michigan are quite anomalous, a marked rise being shown. The birth-rate of the State in 1880 by the United States census was 28.0 per 1,000; in 1890 it was 24.8 per 1,000, a fall of 3.2 per 1,000. The birth-rates of 1890 and 1880 as taken from Table 5 show a rise of 3.4 per 1,000; reasonable deduction for fraudulent returns being made, a fall of 1.1 per 1,000 is indicated, a much more probable statement.

Vital rates for census years of both United States and State censuses are given in Table 6. The number of births and deaths are those collected by the census enumerators, and will be found a little in excess of the registration returns for the corresponding years, there being no interval after the close of the year for which the enumeration is made and the work of enumeration in the case of the census as in the supervisors' registration returns. The lapse of four months causes a deficiency of about 25 per

cent in the registration returns as compared with the census returns. The census returns, however, are much too low to adequately represent the true natality or mortality of the State. We have at present no means of knowing exactly what the death-rate of the State is,—it lies probably between the limits 16.5 and 17.5 per 1,000.

Table 6.—*Births, deaths, and natural increase in Michigan, with rates per thousand population, according to the United States censuses of 1870, 1880 and 1890, and the State censuses of 1874 and 1884. (Still-births included.)*

Years.	Population.	Census returns.			Rates per 1,000 population.		
		Births.	Deaths.	Natural increase.	Births.	Deaths.	Natural increase.
National census of 1870	1,184,059	34,530	11,181	23,349	29.2	9.4	19.8
State census of 1874	1,334,031	.....	* 14,280	.....	.....	10.7	.....
National census of 1880	1,636,937	45,843	19,743	26,100	28.0	12.1	15.9
State census of 1884	1,853,658	53,775	19,979	33,796	29.0	10.7	18.3
National census of 1890	2,093,889	51,931	25,016	26,915	24.8	11.9	12.9

* For the calendar year 1873.

In Tables 7, 8 and 9 the marriage-, birth- and death-rates of certain European countries during the years 1880–92 are presented for comparison. The authority is the last English Registrar-General's report. The birth-rates and death-rates for Japan are from the *Sei-i-kwai Medical Journal*, January, 1892. There are also given rates for a few States in this country,—the only ones presenting a connected series of the rates in question for successive years in their registration reports. Those for Massachusetts are taken from a "Standard Table" kindly supplied by Dr. S. W. Abbott, Secretary of the State Board of Health, and are carefully computed to estimated populations for inter-census years. The data for Connecticut and Rhode Island are from the latest registration reports. It cannot be too strongly urged upon the authorities in charge of the preparation of a registration report, that their first duty, after the proper presentation of the primary tables, is to present a connected statement of the numbers of births, marriages (and divorces) and deaths that have occurred in the state or city during the successive years of registration, together with a comparison of such numbers to the numbers of inhabitants in each year. The population will require estimation for the period lying between censuses, and the method by which such estimate is made should be uniform and should always be stated. It should also be stated whether still-births are included or excluded in births and deaths. It would be preferable for some reasons to exclude them uniformly from births and deaths, but to provide a separate column showing the number of still-births returned and the still-birth-rate for each year in convenient form for addition to either the birth-rate or death-rate as may be desired for special purposes.

It is customary in comparing marriage-rates to employ the ratios of persons married, i. e., double the number of marriages, to population, and in Table 7 the figures represent such rates. It will be noted that Michigan has a higher marriage-rate per 1,000 population than any of the European countries except Hungary in certain years. Massachusetts and Rhode Island show generally a slightly higher rate than Michigan. For 1892 the rates were respectively 18.99, 19.1 and 18.4. It is very satisfactory to know

that the statistics of marriages in Michigan creditably represent the State, and that direct comparisons can be made between them and the statistics of other States and countries without appreciable error. They are the only vital statistics in Michigan subject to *immediate registration*—an essential feature in the accurate collection of all vital data—and stand in sharp contrast to the defective and misleading (unless proper allowance be made) birth-rates and death-rates given for the State by the present system of registration of births and deaths.

Table 7.—*Persons married per 1,000 living population in certain countries and states during the years 1880–92.*

Country or State.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
Austria	15.3	16.0	16.4	15.7	15.7	15.2	15.6	15.6	15.8	15.0	15.1	15.4	15.6
Belgium	14.1	14.1	13.9	13.5	13.5	13.6	13.4	14.2	14.2	14.5	14.5	14.8	15.4
Denmark	15.2	15.6	15.4	15.4	15.6	15.1	14.2	14.0	14.2	14.2	13.8	13.6	13.6
France	14.9	15.0	14.8	15.0	15.3	14.9	14.8	14.5	14.4	14.2	14.0	15.0	15.3
German Empire	15.0	14.9	15.3	15.3	15.7	15.8	15.8	15.6	15.6	16.0	16.1	16.1	15.9
Prussia	15.3	15.3	15.8	15.9	16.2	16.4	16.2	16.0	16.0	16.3	16.4	16.3	16.1
Holland	15.0	14.6	14.3	14.2	14.4	13.9	13.9	14.0	13.8	13.9	14.2	14.2	14.4
Hungary	18.3	19.9	20.6	20.9	20.6	20.0	19.3	17.9	18.7	16.3	16.4	17.2	.....
Italy	13.9	16.2	15.6	16.1	16.5	16.0	15.9	15.9	15.9	15.4	14.7	15.0	15.0
Norway	13.3	12.8	13.4	13.2	13.7	13.3	13.0	12.5	12.2	12.5	13.0	13.2	12.6
Sweden	12.6	12.4	12.7	12.9	13.1	13.3	12.8	12.5	11.8	12.0	12.0	11.6	.....
Switzerland	13.7	13.6	13.6	13.7	13.8	13.9	13.8	14.2	14.1	14.1	14.1	14.3	14.7
United Kingdom	13.6	14.0	14.4	14.4	14.1	13.6	13.3	13.5	13.5	14.1	14.5	14.6	14.5
England and Wales	14.9	15.1	15.5	15.5	15.1	14.5	14.2	14.4	14.4	15.0	15.5	15.6	15.4
Ireland	7.8	8.5	8.6	8.5	9.1	8.6	8.4	8.6	8.4	9.0	8.9	9.2	9.3
Scotland	13.2	13.9	14.1	14.1	13.6	13.1	12.6	12.7	12.8	13.3	13.7	13.9	14.1
United States:													
Massachusetts	17.4	18.5	19.2	19.4	18.2	17.6	18.0	19.0	18.7	18.7	18.6	18.8	19.0
Michigan	18.2	18.9	19.5	19.4	17.6	17.0	17.4	17.6	17.3	17.9	17.8	18.0	18.4
Rhode Island	20.0	19.9	19.0	18.3	17.2	16.3	17.7	18.0	18.7	17.3	18.4	18.5	19.1

Table 8 is of more service in illustrating the trend of natality, the changes in the proportions of births to population, in Europe and this country than for any direct comparisons permissible between the rates given for Michigan and those of other States or countries. The reason for this is the large deficiency in the number of births returned in this State under the present registration law. It is estimated that not more than 60 per cent of the births and deaths that actually occur in the State are returned to the registration office, and consequently the vital rates derived from these returns are much below the truth. For one purpose, however, the uncorrected Michigan rates are useful, and that is to indicate the fluctuations that have occurred from year to year. It is evident that very imperfect rates may serve for this purpose, if only the defective returns bear about the same proportion to the actual number

that occurred from year to year. This may be fairly assumed to be the case, except that for births (to a lesser degree for deaths) the returns for the years 1887–91 were unwarrantably increased by the addition of a large number of fictitious entries from the county of Wayne (Detroit). In the rates given in Table 8, the error arising from this cause has been eliminated, so far as a study of the probable increase of births in that county from 1886 to 1892 will permit, and the rates also differ from those given in Table 5 by the omission of still-births. Although still-births have claims to be included in the total number of births (and also of deaths), the facts that they are not a factor in the natural increase of population, that their exact registration is attended with peculiar difficulties, and that they are omitted in the leading vital statistics reports from both births and deaths, render their omission necessary for purposes of comparison. (It may be said in general that they are included in all other tables of births and deaths in the present and in all preceding Michigan registration reports.)

The birth-rates given in Table 8 for some of the more important countries of Europe are illustrated and compared with the changes in the United States as a whole in Diagram II (Part II), in connection with an abstract of a suggestive article by Dr. Billings, Superintendent of the Vital Statistics of the Eleventh Census, on the "Diminution of the Birth-rate in the United States."

Table 8.—*Births registered per 1,000 living population in certain countries and States during the years 1880–92. (Still-births excluded.)*

Country or State.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
Austria	39.0	37.7	39.1	38.3	38.4	37.4	38.0	38.2	37.9	37.9	36.7	36.1	36.2
Belgium	31.1	31.4	31.3	30.5	30.5	29.9	29.6	29.4	29.1	29.5	28.7	29.6	28.9
Denmark	31.8	32.3	32.4	31.8	33.4	32.6	32.6	32.0	31.7	31.3	30.6	31.0	29.5
France	24.5	24.9	24.8	24.8	24.8	24.2	23.9	23.5	23.1	23.0	1.8	22.6	22.1
German Empire	37.6	37.0	37.2	36.6	37.2	37.0	37.0	36.9	36.6	36.4	35.	37.0	35.7
Prussia	37.8	37.0	37.6	37.1	37.6	37.8	37.7	37.6	37.4	37.1	36.6	37.7	36.3
Holland	35.5	35.0	35.3	34.3	34.9	34.4	34.6	33.7	33.7	33.2	32.9	33.7	32.0
Hungary	42.8	42.9	43.8	44.7	45.6	44.7	45.5	44.1	43.8	43.7	40.3	42.3	.....
Italy	33.9	38.0	37.0	32.7	39.0	38.5	37.0	39.0	37.6	38.4	35.9	37.3	36.3
Japan	24.0	25.6	24.9	26.4	27.8	26.9	27.3	27.1	29.6	30.2	.....	.....	.....
Norway	30.7	30.0	30.9	30.9	31.0	31.3	30.9	30.8	30.8	29.7	30.3	30.9	29.6
Sweden	29.4	29.1	29.4	28.9	30.0	29.4	29.8	29.7	28.8	27.7	28.0	28.3	.....
Switzerland	29.6	29.8	28.9	28.5	28.3	27.7	27.8	27.9	27.7	27.6	26.6	28.2	28.0
United Kingdom	32.7	32.5	32.3	32.0	32.2	31.6	31.5	30.7	30.1	30.0	29.2	30.4	29.5
England and Wales	34.2	33.9	33.8	33.5	33.6	32.9	32.8	31.9	31.2	31.1	30.2	31.4	30.5
Ireland	24.7	24.5	24.4	23.5	23.9	23.5	23.2	23.1	22.8	22.7	22.3	23.1	22.4
Scotland	33.6	33.7	33.4	32.7	33.7	32.7	32.9	31.8	31.3	30.9	30.2	31.2	30.7
United States	31.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	26.7	.....	.....
Connecticut	22.2	22.4	23.9	25.4	23.0	22.7	22.2	22.8	22.2	23.4	23.3	24.8	24.7
Massachusetts	24.8	24.9	24.8	25.2	25.5	25.1	25.4	25.9	26.0	26.2	25.8	27.4	27.8
Michigan	21.1	20.2	20.3	22.5	21.7	22.0	21.0	21.1	20.3	21.3	19.8	20.3	20.7

Table 13.—*Comparing, by counties, the total number of marriages, births and deaths registered in Michigan for the years 1891-92; showing also the increase (or decrease) of the number registered for 1892 as compared with that of the preceding year. (Still-births included in births and deaths.)*

State and counties.	Marriages.			Births.			Deaths.		
	Number in 1892.	Number in 1891.	*Increase over 1891.	Number in 1892.	Number in 1891.	*Increase over 1891.	Number in 1892.	Number in 1891.	*Increase over 1891.
State	20,107	19,231	876	46,221	50,812	—4,591	21,729	22,079	—350
Alcona	40	40	.....	111	83	28	40	25	15
Alger	8	8	.....	24	10	14	10	2	8
Allegan	361	351	10	702	752	—50	356	455	—99
Alpena	161	148	13	459	503	—44	154	150	4
Antrim	84	104	—20	226	230	—4	87	76	11
Arenac	50	46	4	135	135	.....	51	31	20
Baraga	45	36	9	91	96	—5	41	38	3
Barry	217	212	5	343	394	—51	164	181	—17
Bay	516	508	8	1,539	1,637	—98	594	534	60
Benzie	84	60	24	98	138	—40	53	58	—5
Berrien	420	425	—5	566	565	1	314	322	—8
Branch	302	245	57	312	426	—114	255	261	—6
Calhoun	426	414	12	742	605	137	409	355	54
Cass	188	210	—22	247	297	—50	175	151	24
Charlevoix	83	84	—1	166	162	4	75	73	2
Cheboygan	95	89	6	301	285	16	110	90	20
Chippewa	128	117	11	267	226	41	98	79	19
Clare	68	71	—3	155	157	—2	45	61	—16
Clinton	237	246	—9	482	473	9	241	218	23
Crawford	28	24	4	52	50	2	23	9	14
Delta	147	159	—12	484	427	57	141	172	—31
Dickinson	147	41	106	548	557	—9	194	224	—30
Eaton	355	326	29	378	475	—97	288	334	—46
Emmet	105	90	15	136	132	4	64	117	—53
Genesee	367	355	12	608	585	18	407	384	23
Gladwin	43	46	—3	67	19	48	13	6	7
Gogebic	236	164	72	678	501	177	456	232	224
Gd. Traverse	161	149	12	254	296	—42	136	164	—28
Gratiot	265	275	—10	473	486	—13	188	201	—13
Hillsdale	315	270	45	393	394	—1	323	291	32
Houghton	399	419	—20	1,691	1,530	161	552	490	62
Huron	261	261	20	755	792	—37	225	217	8
Ingham	384	390	—6	699	601	98	386	407	—21

* In many cases, which are indicated by the minus sign (—), a decrease is shown for 1892 as compared with the preceding year.

Table 13.—CONTINUED.—*Returns of 1891 and 1892 compared.*

Counties.	Marriages.			Births.			Deaths.		
	Number in 1892.	Number in 1891.	*Increase over 1891.	Number in 1892.	Number in 1891.	*Increase over 1891.	Number in 1892.	Number in 1891.	*Increase over 1891.
Ionia	339	311	28	488	531	—43	265	235	30
Iosco	114	108	6	283	319	—36	168	149	19
Iron†	47	37	10	209	----------	209	62	----------	62
Isabella	212	180	32	442	389	53	116	161	—45
Jackson	440	391	49	662	602	60	490	403	87
Kalamazoo	433	402	31	685	748	—63	433	446	—13
Kalkaska	49	56	—7	106	126	—20	48	56	—8
Kent	1,242	1,287	—45	2,551	2,349	202	1,321	1,239	82
Keweenaw	32	22	10	117	134	—17	52	75	—23
Lake	49	40	9	94	86	8	28	19	9
Lapeer	287	251	36	377	470	—93	197	223	—26
Leelanau	62	61	1	194	197	—3	52	62	—10
Lenawee	421	392	29	583	708	—125	412	465	—53
Livingston	183	152	31	250	315	—65	166	194	—28
Luce	24	30	—6	40	58	—18	24	9	15
Mackinac	51	71	—20	125	70	55	43	17	26
Macomb	243	255	—12	592	587	5	335	334	1
Manistee	229	211	18	732	627	105	204	288	—84
Manitou	2	1	1	7	12	—5	2	10	—8
Marquette	396	468	—72	1,526	1,244	282	574	608	—34
Mason	172	131	41	454	418	36	151	178	—27
Mecosta	190	181	9	357	380	—23	126	163	—37
Menominee	162	233	—71	657	554	103	174	144	30
Midland	90	104	—14	205	238	—33	89	98	—9
Missaukee	45	61	—16	164	147	17	47	41	6
Monroe	327	308	19	609	737	—128	296	307	—11
Montcalm	277	299	—22	539	596	—57	241	251	—10
Montmorency	13	6	7	31	18	13	6	7	—1
Muskegon	331	382	—51	1,023	1,064	—41	449	432	17
Newaygo	169	169	----------	313	374	—61	116	139	—23
Oakland	329	288	41	512	513	—1	445	399	46
Oceana	115	114	1	301	295	6	87	131	—44
Ogemaw	40	46	—6	108	105	3	32	29	3
Ontonagon	40	33	7	68	61	7	20	20	----------
Osceola	119	135	—16	314	346	—32	101	135	—34
Oscoda	14	12	2	31	34	—3	12	6	6
Otsego	42	36	6	52	67	—15	33	41	—8
Ottawa	280	245	35	824	841	—17	351	316	35

* In many cases, which are indicated by the minus sign (—), a decrease is shown for 1892 as compared with the preceding year. † No returns of births or deaths were made for 1891.

Table 13.—CONCLUDED.—*Returns of 1891 and 1892 compared.*

Counties.	Marriages.			Births.			Deaths.		
	Number in 1892.	Number in 1891.	*Increase over 1891.	Number in 1892.	Number in 1891.	*Increase over 1891.	Number in 1892.	Number in 1891.	*Increase over 1891.
Presque Isle	28	30	—2	166	122	44	32	41	—9
Roscommon	9	16	—7	39	25	14	13	6	7
Saginaw	727	691	36	1,918	2,010	—92	1,087	931	156
Sanilac	277	220	57	699	777	—78	287	269	18
Schoolcraft	82	73	9	144	97	47	46	32	14
Shiawassee	357	307	50	441	434	7	184	194	—10
St. Clair	502	488	14	1,040	1,124	—84	575	530	45
St. Joseph	211	229	—18	341	365	—24	315	274	41
Tuscola	248	252	—4	542	558	—16	219	221	—2
Van Buren	273	273	.....	448	452	—4	286	276	10
Washtenaw	362	355	7	585	534	51	436	401	35
Wayne	2,540	2,285	255	8,779	13,632	—4,853	3,722	4,594	—872
Wexford	135	120	15	277	303	—26	91	72	19

* In many cases, which are indicated by the minus sign (—), a decrease is shown for 1892 as compared with the preceding year.

Four counties, Alcona, Alger, Newaygo and Van Buren, report the same number of marriages as in 1891. The largest amounts of increase in the number of marriages solemnized are shown for the counties of Branch, Dickinson, Gogebic, Hillsdale, Jackson, Mason, Oakland, Sanilac and Wayne. The largest amounts of decrease are shown by the counties of Kent, Marquette, Menominee and Muskegon.

Arenac county returned the same number of births in 1892 as in 1891. Calhoun, Gogebic, Houghton, Kent, Manistee, Marquette and Menominee show considerably increased numbers of births; Bay, Branch, Eaton, Lapeer, Lenawee, Monroe, Saginaw, Sanilac, St. Clair and Wayne counties show large decreases. The county of Iron, which made no report of births or deaths in 1891, returned 209 births and 62 deaths for the year 1892.

One county, Ontonagon, reported the same number of deaths for 1892 as for 1891. The following showed largely increased numbers: Bay, Calhoun, Gogebic, Houghton Jackson, Kent, Oakland and Saginaw. Fewer deaths were reported, by a considerable number, from Allegan, Eaton, Emmet, Isabella, Lenawee, Manistee and Wayne counties.

In many cases an increase in the number of marriages returned from a county is associated with a marked decrease in the number of births or deaths returned. This is suggestive, in some cases, of failure to make as full and correct enumerations as in the preceding year, rather than to peculiar relations of the vital statistics of the counties in question. The contrary condition, a fall in the number of marriages with a large increase of the number of births or deaths returned, is suggestive of the greater completeness of the enumeration for 1892, as compared with that for the preceding year. Large gains in all classes of returns, as in Gogebic county, would indicate that the population has been materially augmented since the preceding year.

Table 14 presents varied and valuable information concerning the State, selected especially for the light it throws upon the vital statistics returned from many counties. The sources of the data are chiefly the Bulletins and Compendium of the last United States census; for the statements relative to the principal products and industries, the last edition of "The Resources of Michigan," issued by this department in 1893, has been followed.

The bearing of the data here given upon the subject of vital statistics is important in many ways. The movement of population may be taken as the net result of the excess of births over deaths for the period of ten years between the last two National censuses, plus the amount of increase from immigration, and also, it must be said with regret, plus a certain amount of unregistered natural increase arising from the failure to fully collect all the births and deaths that actually occurred in the State. In many counties, as was pointed out in detail in the last report, the population showed a decrease during the inter-census period. In others, among them many of the oldest and most thickly settled portions of the State, a slight increase was observed on the whole, but due entirely to the growth of the cities contained in them. The city populations being removed, the rural population of twenty-four counties (see Exhibit H, *d*, p. 26, Vital Statistics Report of 1891), representing over a quarter of the total population of the State (694,194 in 1890), showed an average decrease of 4.66 per cent. In estimating populations for the purpose of comparing vital rates in inter-census years, these facts must be considered.

The predominance of males in Michigan is in marked contrast to the relative numbers of the sexes in the Eastern States. The ratio in 1890, 109 males for every 100 females, is also about the same as the proportion of male births to female births. The ratio of deaths of males is higher, being about 118 to 100 in recent years, and thus there would appear to be a tendency to equalization of the sexes, providing the disturbing effect of the greater immigration of males be removed. In comparing the birth-rates of the several counties, as stated in Table 12, the proportions of females constituting their populations should be considered. Thus the birth-rates of the counties of Alcona and Allegan were, respectively, 18.9 and 17.9 per 1,000 total population. But the females in Alcona county only number about two-thirds as many as the males, while the proportions are nearly equal in Allegan county. Consequently, the birth-rate is higher per 1,000 female inhabitants for Alcona county, as compared with Allegan, than the figures based on total population would indicate. The true method of comparison is by stating the rate of births per 1,000 women of child-bearing ages, 15–44, but data for such comparisons are not yet at hand.

The numbers of the native-born and foreign-born inhabitants in the several counties are also of interest in comparison with the statements of the births, marriages and deaths of the corresponding nativities given in Parts II, III and IV of this report. About three-fourths of the inhabitants of the State are native-born, i. e., born in the United States, and only one-fourth were born in foreign countries, including a large number, 181,416, in Canada. The deaths returned show somewhat similar proportions by nativity, but the number of births to foreign-born parents, and the number of marriages of foreign-born couples, are nearly or quite equal to those of the native-born.

The numbers of dwellings and families, and the density of population in the several counties, are of interest from their relations to the birth-rates and death-rates recorded. Density of population is an important factor in demography, and close relations are discoverable between it and total mortality, and especially to mortality from infectious diseases. The products and industries affect the mortality of the people of the different counties, and are also of interest for comparison with the list of casualties given in Part IV.

Table 14.—*Increase of population in Michigan from 1880 to 1890, by counties, with families, density of population, and principal*

State and counties.	Movement of population, 1880 to 1890.				Sex, 1890.		Nativity, 1890.	
	1890.	1880.	Increase or decrease.	Per cent.	Males.	Females.	Native-born.	Foreign-born.
State	2,093,889	1,636,937	456,952	27.92	1,091,780	1,002,109	1,550,009	543,880
Alcona	5,409	3,107	2,302	74.09	3,226	2,183	2,859	2,550
Alger	1,238	690	548	79.42	832	406	657	581
Allegan	38,961	37,815	1,146	3.03	20,015	18,946	33,486	5,475
Alpena	15,581	8,789	6,792	77.28	8,182	7,399	8,251	7,330
Antrim	10,413	5,237	5,176	98.84	5,678	4,735	7,746	2,667
Arenac	5,683	2,931	2,752	93.89	3,048	2,635	3,594	2,089
Baraga	3,036	1,804	1,232	68.29	1,755	1,281	1,756	1,280
Barry	23,783	25,317	a 1,534	a 6.06	12,427	11,356	21,794	1,989
Bay	56,412	35,150	21,262	60.49	29,602	26,810	34,909	21,503
Benzie	5,237	3,433	1,804	52.55	2,807	2,430	4,096	1,141
Berrien	41,285	36,785	4,500	12.23	20,939	20,346	35,470	5,815
Branch	26,791	27,941	a 1,150	a 4.12	13,461	13,330	25,086	1,705
Calhoun	43,501	38,452	5,049	13.13	21,791	21,710	38,579	4,922
Cass	20,953	22,009	a 1,056	a 4.80	10,801	10,152	19,816	1,137
Charlevoix	9,686	5,115	4,571	89.36	5,172	4,514	7,286	2,400
Cheboygan	11,986	6,524	5,462	83.72	6,506	5,478	7,506	4,480
Chippewa	12,019	5,248	6,771	129.02	6,606	5,413	5,212	6,807
Clare	7,558	4,187	3,371	80.51	4,286	3,272	5,473	2,085
Clinton	26,509	28,100	a 1,591	a 5.66	13,518	12,991	23,604	2,905
Crawford	2,962	1,159	1,803	155.57	1,885	1,077	1,967	995
Delta	15,380	6,812	8,518	125.04	8,849	6,481	8,948	6,382
Dickinson †								
Eaton	32,094	31,225	869	2.78	16,274	15,820	30,252	1,842
Emmet	8,756	6,639	2,117	31.89	4,515	4,241	7,263	1,493
Genesee	39,480	39,220	210	0.54	19,946	19,484	33,780	5,700
Gladwin	4,208	1,127	3,081	273.38	2,553	1,655	2,714	1,494
Gogebic *	13,166		13,166		8,690	4,476	5,854	7,312
Grand Traverse	13,355	8,422	4,933	58.57	7,164	6,191	10,269	3,086
Gratiot	28,668	21,936	6,732	30.69	14,902	13,766	26,091	2,577
Hillsdale	30,660	32,723	a 2,063	a 6.30	15,341	15,319	28,878	1,782
Houghton	35,389	22,473	12,916	57.47	19,553	15,836	18,571	16,818
Huron	28,545	20,089	8,456	42.09	14,896	13,649	16,176	12,369
Ingham	37,666	33,676	3,990	11.85	19,409	18,257	33,190	4,476
Ionia	32,801	33,872	a 1,071	a 3.16	16,819	15,982	29,140	3,661

a Decrease. * Not formed in 1880. † Not formed in 1890.

statement of important conditions in 1890, as sex, nativity, number of dwellings and products and industries of each county.

Dwellings and families, 1890.				Density of population,—persons to square mile.	Chief products and industries.
Total dwellings.	Total families.	Persons to a dwelling.	Persons to a family.		
494,370	455,004	4.82	4.60	36.5	
988	1,009	5.47	5.36	8.0	Lumber and farm products.
226	230	5.48	5.38	1.3	Lumber, building stone, charcoal and fisheries.
8,809	9,010	4.42	4.32	47.1	Farm products, fruit, peppermint, lumber, paper and woolen mills.
2,828	3,123	5.51	4.99	26.9	Lumber, farm products and fisheries.
2,234	2,286	4.66	4.56	21.7	Lumber, bark, charcoal and farm products.
1,164	1,177	4.88	4.83	15.5	Lumber, farm products, manufactures and fisheries.
536	557	5.66	5.45	3.3	Lumber, building stone, slate and farm products.
5,586	5,756	4.26	4.13	43.1	Farming products, fruits and manufactures.
10,718	11,188	5.26	5.04	128.3	Lumber, ship building, manufactures and fisheries.
1,072	1,108	4.89	4.73	16.4	Lumber and fruit.
9,185	9,517	4.49	4.34	72.7	Farm products, fruit, manufactures and fisheries.
6,639	6,802	4.04	3.94	53.5	Farm products, dairying and stock.
9,985	10,576	4.36	4.11	62.8	Farm products, fruit and manufactures.
4,931	5,049	4.25	4.15	42.9	Farm products, fruit and manufactures.
2,059	2,102	4.70	4.61	25.1	Lumber, farm products, fisheries, etc.
2,367	2,421	5.06	4.95	16.4	Lumber, farm products and fisheries.
2,186	2,266	5.50	5.30	7.7	Lumber, grain, building stone.
1,556	1,606	4.86	4.71	13.3	Farm products.
6,098	6,167	4.85	4.80	46.5	Farm products and stock.
576	581	5.14	5.10	5.3	Lumber saw mills and farm products.
2,520	2,778	6.08	5.52	13.2	Lumber, iron ore, charcoal and farm products.
					Iron ore, lumber and farm products.
7,715	7,920	4.16	4.05	56.0	Farm products and manufactures.
1,966	2,033	4.45	4.31	20.6	Farm products, fruit, lumber and manufactures.
9,026	9,367	4.37	4.21	61.4	Farm products, fruit and manufactures.
811	832	5.19	5.06	8.2	Fruit and farm products.
1,900	2,115	6.93	6.23	12.3	Iron ore and lumbering.
2,586	2,666	5.16	5.01	28.8	Fruit, farm products, lumber, manufactures.
6,462	6,564	4.44	4.37	50.3	Fruit, farm products and mineral springs.
7,617	7,833	4.03	3.91	51.0	Farm products, dairying and stock.
5,848	6,361	6.05	5.56	35.0	Copper, limestone and slate.
5,297	5,401	5.39	5.29	34.1	Farm products, lumber, salt, lime, coal, building stone.
8,602	8,784	4.38	4.29	68.1	Farm products, manufactures and stock.
7,563	7,770	4.34	4.22	57.3	Building stone, silk mills, farm products and manufactures.

Table 14.—CONTINUED.—*Movement and*

Counties.	Movement of population, 1880 to 1890.				Sex, 1890.		Nativity, 1890.	
	1890.	1880.	Increase or decrease.	Per cent.	Males.	Females.	Native-born.	Foreign-born.
Iosco	15,224	6,873	8,351	121.50	8,340	6,884	8,557	6,667
Iron*	4,432	.....	4,432	.....	2,783	1,649	2,126	2,306
Isabella	18,784	12,159	6,625	54.49	9,960	8,824	15,081	3,703
Isle Royal	135	55	80	145.45	126	9	36	99
Jackson	45,031	42,031	3,000	7.14	22,833	22,198	39,072	5,959
Kalamazoo	39,273	34,342	4,931	14.36	19,588	19,685	32,664	6,609
Kalkaska	5,160	2,937	2,223	75.69	2,915	2,245	4,143	1,017
Kent	109,922	73,253	36,669	50.06	56,267	53,655	79,983	29,939
Keweenaw	2,594	4,270	a 1,376	a 32.22	1,630	1,264	1,568	1,326
Lake	6,505	3,233	3,272	101.21	3,755	2,750	4,597	1,908
Lapeer	29,213	30,138	a 925	a 3.07	15,034	14,179	22,220	6,993
Leelanau	7,944	6,253	1,691	27.04	4,287	3,657	5,839	2,105
Lenawee	48,448	48,343	105	0.22	23,914	24,534	43,045	5,403
Livingston	20,858	22,251	a 1,393	a 6.26	10,748	10,110	18,346	2,513
Luce*	2,455	.....	2,455	.....	1,603	852	890	1,565
Mackinac	7,830	2,902	4,928	169.81	4,637	3,193	5,039	2,791
Macomb	31,813	31,627	186	0.59	16,201	15,612	24,088	7,725
Manistee	24,230	12,532	11,698	93.35	12,923	11,307	14,233	9,997
Manitou	860	1,334	a 474	a 35.53	479	381	600	260
Marquette	39,521	25,394	14,127	55.63	22,927	16,594	18,750	20,771
Mason	16,385	10,065	6,320	62.79	8,758	7,627	11,036	5,349
Mecosta	19,697	13,973	5,724	40.96	10,326	9,371	15,303	4,394
Menominee	33,639	11,987	21,652	180.63	20,385	13,254	16,131	17,508
Midland	10,657	6,893	3,764	54.61	5,675	4,982	8,005	2,652
Missaukee	5,048	1,553	3,495	225.05	2,969	2,079	3,182	1,866
Monroe	32,337	33,624	a 1,287	a 3.83	16,624	15,713	27,911	4,426
Montcalm	32,637	33,148	a 511	a 1.54	16,850	15,787	27,302	5,335
Montmorency*	1,487	.....	1,487	.....	585	602	907	580
Muskegon	40,013	26,586	13,427	50.50	20,927	19,086	26,278	13,735
Newaygo	20,476	14,688	5,788	39.41	11,350	9,126	16,389	4,087
Oakland	41,245	41,537	a 292	a 0.70	20,984	20,261	34,513	6,732
Oceana	15,698	11,699	3,999	34.18	8,362	7,336	13,123	2,575
Ogemaw	5,583	1,914	3,669	191.69	3,398	2,185	3,451	2,132
Ontonagon	3,756	2,565	1,191	46.43	2,342	1,414	2,423	1,333
Osceola	14,630	10,777	3,853	35.75	7,868	6,762	10,946	3,684
Oscoda	1,904	467	1,437	307.71	1,165	739	1,408	496

a Decrease.
* Not formed in 1880.

character of population of Michigan.

Dwellings and families, 1890.				Density of population,—persons to square mile.	Chief products and industries.
Total dwellings.	Total families.	Persons to a dwelling.	Persons to a family.		
2,882	3,052	5.28	4.99	27.5	Lumber, farm products, salt and plaster.
832	851	5.33	5.21	3.7	Lumber and farm products.
3,966	4,094	4.74	4.59	32.6	Lumber and farm products.
32	32	4.22	4.22	0.6	Stone, native copper and fisheries.
10,168	10,635	4.43	4.23	63.2	Farm products, coal, sandstone and manufactures.
8,735	9,158	4.50	4.29	70.3	Farm products, celery, peppermint and manufactures.
1,081	1,119	4.77	4.61	9.2	Farm products, charcoal and lumber.
22,263	24,469	4.94	4.49	128.9	Farm products, fruits, furniture and manufactures.
517	519	5.60	5.58	8.9	Copper and lumber.
1,276	1,280	5.10	5.08	11.4	Timber, charcoal, farm products.
6,482	6,604	4.51	4.42	44.1	Farm products, lumber, charcoal and manufactures.
1,559	1,590	5.10	5.00	26.0	Charcoal, fruit and farm products.
11,434	11,761	4.24	4.12	64.0	Wool, farm products, fruits and cars.
4,816	4,944	4.33	4.22	36.0	Wool, stock, fruit and farm products.
382	414	6.43	5.93	10.4	Lumber, celery, charcoal and farm products.
1,365	1,423	5.74	5.50	7.8	Charcoal, ore, lumber and farm products.
6,915	7,180	4.60	4.46	67.3	Stock, ships, mineral springs and fisheries.
4,485	4,852	5.40	4.99	44.4	Lumber, salt, fruits and farm products.
169	173	5.09	4.97	8.0	Fisheries and farm products.
5,742	6,688	6.88	5.91	23.6	Iron, lumber, charcoal, pig iron, stone and fisheries.
3,264	3,498	5.02	4.68	33.3	Lumber, fruit and farm products.
4,238	4,335	4.65	4.54	34.8	Fruit, farm products and lumber.
5,089	5,705	6.61	5.90	32.3	Iron, farm products and lumber.
2,303	2,343	4.63	4.55	20.3	Salt, lumber, farm products, bromine.
946	966	5.34	5.23	8.9	Farm products and lumber.
6,715	6,871	4.82	4.71	57.4	Stock, farm products, manufactures and fisheries.
7,478	7,585	4.36	4.30	46.0	Farm products and lumber.
269	273	5.53	5.45	2.7	Farm products and lumber.
8,237	8,581	4.86	4.66	79.7	Farm products, lumber, fisheries, fruit and manufactures.
4,188	4,261	4.89	4.81	24.2	Farm products, fruit and manufactures.
9,592	9,751	4.30	4.23	45.9	Wool, stock, fruit and farm products.
3,430	3,492	4.58	4.50	29.1	Lumber, fruit, furniture and farm products.
1,014	1,014	5.51	5.51	9.8	Lumber, farm products and manufactures.
840	857	4.47	4.38	2.8	Copper, fisheries, farm products, lumber.
3,104	3,126	4.71	4.68	25.5	Timber and wood manufactures.
400	411	4.76	4.63	3.3	Lumber and farm products.

Table 14.—CONCLUDED.—*Movement and*

Counties.	Movement of population, 1880 to 1890.				Sex, 1890.		Nativity, 1890.	
	1890.	1880.	Increase or decrease.	Per cent.	Males.	Females.	Native-born.	Foreign-born.
Otsego	4,272	1,974	2,298	116.41	2,410	1,862	2,921	1,351
Ottawa	35,358	33,126	2,232	6.74	18,341	17,017	24,917	10,441
Presque Isle	4,687	3,113	1,574	50.56	2,581	2,106	2,854	1,833
Roscommon	2,033	1,459	574	39.34	1,301	732	1,256	777
Saginaw	82,278	59,095	23,178	39.22	42,917	39,356	56,777	25,496
Sanilac	32,589	26,341	6,248	23.72	17,008	15,581	18,658	13,931
Schoolcraft	5,818	885	4,933	557.40	3,654	2,164	3,002	2 816
Shiawassee	30,952	27,059	3,893	14.39	16,024	14,928	26,554	4,398
St. Clair	52,105	46,197	5,908	12.79	26,605	25,500	33,699	18,406
St. Joseph	25,356	26,626	a 1,270	a 4.77	12,807	12,549	22,890	2,466
Tuscola	32,508	25,738	6,770	26.30	16,840	15,668	24,493	8,015
Van Buren	30,541	30,807	a 266	a 0.86	15,493	15,048	28,368	2,173
Washtenaw	42,210	41,848	362	0.87	20,756	21,454	34,471	7,739
Wayne	257,114	166,444	90,670	54.47	127,765	129,349	161,097	96,017
Wexford	11,278	6,815	4,463	65.49	6,010	5,268	8,644	2,634

a Decrease.

NOTE ON THE VITAL STATISTICS OF AUSTRALIA AND NEW ZEALAND.

Since Tables 7, 8 and 9 were in type, some interesting data in regard to the vital rates of Australia were noted in the Proceedings and Papers of the Parliament of South Australia, a set of which was recently received at the State Library. As little has been published in this country on the subject, the rates are inserted in this place for comparison with the rates stated in Tables 7, 8 and 9. The vital statistics of Australia are of peculiar interest to Americans as representing the experience of a people very similar to our own in constitution, but under very dissimilar conditions as regards climate and general environment.

The aggregate population of the seven Australasian colonies was estimated at about 4,000,000 on December 31, 1891, of which number 100,000 were aborigines. Victoria and New South Wales had in round numbers 1,157,000 each; Queensland 410,000; South Australia, 321,000; Tasmania, 153,000; Western Australia, 53,000; and New Zealand, 634,000. The authority is the Annual Report of the Registrar-General of South Australia for 1891, which presents the vital rates for that colony only for a series of years. From the relations of the rates for the other colonies, as given for the year 1891, the rates for South Australia for the period 1882–91 may be presumed to be fairly representative of the variations, at least, of all the other colonies.

Vital statistics of South Australia (exclusive of the Northern Territory); decennial return showing rates per 1,000 estimated mean population, 1882–91.

	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Persons married	17.7	17.3	16.8	15.9	13.0	13.0	13.6	13.4	14.3	14.6
Births	38.0	38.0	39.0	39.0	36.8	35.5	34.4	33.5	33.3	33.9
Deaths	15.4	15.1	15.8	12.9	14.0	12.9	12.3	11.4	12.6	13.3

character of population of Michigan.

Dwellings and families, 1890.				Density of population,—persons to square mile.	Chief products and industries.
Total dwellings.	Total families.	Persons to a dwelling.	Persons to a family.		
368	379	4.92	4.86	8.2	Logs and lumber.
7,321	7,452	4.83	4.74	63.9	Farm products, fruit, celery, stone, manufactures.
817	827	5.74	5.67	7.0	Lumber, fisheries and farm products.
360	379	5.65	5.36	3.8	Lumber and farm products.
16,266	16,761	5.06	4.91	101.9	Lumber, salt, coal, building stone and lake commerce.
6,474	6,538	5.08	4.98	33.9	Lumber, farm products, manufactures and fisheries.
973	1,013	5.98	5.74	4.9	Pine, cedar, pig iron, fisheries and farm products.
7,084	7,389	4.37	4.25	57.6	Farm products, coal and manufactures.
10,691	10,908	4.87	4.78	75.0	Farm products, salt, lumber, fisheries and mineral water.
6,007	6,171	4.22	4.11	50.5	Fruit, peppermint oil, sand, brick and farm products.
7,375	7,361	4 47	4.42	40.1	Lumber products and farm products.
7,356	7,522	4.15	4.06	50.0	Fruit, stock, peppermint and farm products.
9,199	9,656	4.59	4.37	59.4	Woolen and paper mills, fruit and farm products.
47,397	52,927	5.42	4.86	427.4	Fruit, farm products, fisheries, ship building, peppermint, furniture, etc.
2,423	2,514	4.65	4.49	19.7	Lumber, fruit and farm products.

The rates per 1,000 of the seven Australasian colonies for the census year 1891, were as follows:

Colony.	Persons married.	Births.	Deaths.
Victoria	15.3	33.6	16.2
New South Wales	14.8	34.6	14.3
New Zealand	12.1	29.0	10.4
Queensland	14.4	36.4	12.8
South Australia	14.6	33.9	13.3
Tasmania	13.3	33.4	15.0
Western Australia	16.0	34.6	16.6

In examining these statistics, the rates per 1,000 of persons married, births and deaths all seem to show a decline through the period in question. The marriage-rates for all of the colonies are very much lower than those in this country (see statements for three States having accurate registration of marriages in Table 7), and are even lower than those of many European countries. The birth-rates are slightly higher than the estimated average birth-rate of the United States, but show the same decline through the ten years noticeable in the birth-rates of Europe and America.

The death-rates are also very low, as compared with reliable rates representative of the United States. This depends in part on the more favorable age-constitution of the population. Thus, comparing Michigan and South Australia, we have the following:

	Michigan, 1890.	South Australia, 1891.
Per cent under 5 years	11.3	14.1
Per cent aged 5–14, inclusive	21.4	25.3
Per cent aged 15–64, inclusive	62.2	57.3
Per cent aged 65 and over	4.4	3.3

PART II.—BIRTHS IN MICHIGAN DURING THE YEAR 1892.

The number of births registered for the year 1892 is 46,221. A large diminution is apparent as compared with the numbers returned for the years immediately preceding (see Table 5, Part I), but it must be remembered that the years from 1887 to 1891 contained a large number of fictitious returns of births from Wayne county. It is impossible to state exactly to what extent the returns are affected from this cause, but it is believed that the returns for this year, 1892, are more reliable than those for any year since 1886. It should be understood, of course, that the returns of births and deaths are defective to a large degree in every year, but so long as they are not tampered with, this deficiency can be studied and allowed for to some extent, and the actual changes in the birth-rates and death-rates of the State be inferred with approximate accuracy from the numbers of births and deaths returned. When, however, fraud enters into the returns, and large and irregular additions are made to the births and deaths, the usual basis of estimation is so impaired that it is impossible to judge of what the real conditions are, or even to say definitely to what extent or in what directions the birth-rates and death-rates have fluctuated from year to year. It is perfectly possible for a few dishonest enumerators in a single city to so alter and add to the returns of births and deaths that the work of all the other enumerators in the State, as represented in the final State total, shall be quite vitiated. The only remedy, and this is only palliative, is to exclude the returns from any locality where they are known to be grossly incorrect, or to admit them with such reasonable deductions as may be necessary. On page 14 is a statement of the number of births and the birth-rates for each year from 1887 to 1891, inclusive, after correction of Wayne county returns by deduction of the probable excess of registration. These figures will be referred to in the following comparisons as far as practicable, instead of those given in Table 5, which are the actual figures returned, but it is, of course, impossible to eliminate the incorrect returns from the detailed statements by sex, nativity and color given in the following tables:

SUMMARY OF THE REGISTRATION OF BIRTHS FOR THE YEAR 1892.

The following statements include the more important features of the registration of births in Michigan for the year 1892:

Total number of births returned,	**46,221**
Birth-rate per 1,000 estimated population,	**21.2**
(Actual number of births that occurred, estimated at	**78,954**
Actual birth-rate per 1,000, estimated at	**33.8)**

Decrease of births returned for 1892 (46,221) from the number returned for 1891 (50,812),	**4,591**
(Increase of births returned for 1892 (46,221) over the number returned for 1891 after making deduction for fraudulent returns from Wayne county (45,561), at least	**660)**
Of the 46,221 children born in 1892 according to the returns, there were:	
Still-births (males, 597; females, 374; unknown, 43),	**1,014**
Still-birth-rate per 1,000 population,	**0.5**
Still-births per 1,000 births,	**21.9**
Children born alive,	**45,207**
Children born alive per 1,000 population,	**20.7**
Males,	**24,148**
Females,	**21,995**
Sex unknown or unspecified (43 of these still-born),	**78**
Born of parents both of native birth,	**18,368**
Born of parents both of foreign birth,	**18,344**
White,	**45,938**
Colored (black, 91; mulatto, 41; Indian, 114),	**246**
Color unknown or unspecified,	**37**
Twin children (males, 553; females, 559; unknown, 2),	**1,114**
Illegitimate births (males, 191; females, 206; unknown, 8),	**405**
Illegitimate births per 1,000 births,	**8.8**

BIRTH-RATES IN MICHIGAN, 1892.

The birth-rate of the State for 1892 based upon an estimated population of 2,185,279 is 21.2 per 1,000 inhabitants. This is lower than any rate since the commencement of registration as shown in the comparison of the successive years in Table 5, Part I, with the exception of those recorded for two years, 21.1 for 1871 and 20.7 for 1881. The rate for the five-year period 1886–90 according to the returns was 23.8 per 1,000. When, however, allowance is made for fraudulent returns from Wayne county, the rate for the five-year period falls to 21.3, and the birth-rate for the year is only slightly below the average. The rate for 1888 would be 21.0 instead of 24.4 and that for 1890, 20.5 instead of 25.0, both lower than the birth-rate of the State in 1892. On the whole, so far as the tampered returns may serve as the basis of any judgment, it may be said that the year 1892 shows a slight diminution in the total birth-rate for the State.

In Table 12, Part I, the birth-rates for the counties of the State as calculated to estimated population, may be seen. As two years have elapsed since the census enumeration, and as different localities in the State may show very different rates of growth as compared with the rates recorded for the last census decade, the population given and the birth-rates based on them cannot be accepted as absolutely correct in every case. They are, however, undoubtedly more correct than the rates would be if calculated directly upon the results of the last census with no allowance for increase since 1890. In general it may be said of these rates that they exhibit somewhat greater uniformity than those of deaths. There seem to be fewer counties imperfectly represented and falling considerably below the average degree of efficiency of registration.

The counties showing the lowest birth-rates are those situated in the oldest settled portion of the State or the southern part of the Lower Peninsula. The birth-rates for

certain counties of this class are as follows: Branch, 11.7; Berrien, 13.4; Cass, 11.9; Eaton, 11.7; Lenawee, 12.0; Livingston, 12.1; Oakland, 12.4; Washtenaw, 13.8.

The counties showing an extremely high birth-rate are chiefly those situated in the Upper Peninsula, or, in some cases, those containing large cities. Some of the highest rates recorded are as follows: Dickinson, 32.5; Gogebic 42.9; Houghton, 44.5; Iron 43.3; Keweenaw, 44.7; Marquette, 37.5. In all of these instances the counties contain a large and very prolific foreign-born population, and the rates given are probably not far from the truth. It should be remembered, however, that owing to the high birth-rate in these counties and the large amount of immigration received by them as compared with other portions of the State, the changes in the population are liable to be more abrupt and more extensive than in the older counties, and in consequence the population is liable to be underestimated in inter-census years, with the result that the vital rates would appear to be somewhat higher than they actually are.

The counties containing large cities generally show a somewhat higher-birth-rate than the average. Besides the fact that the cities have usually a larger percentage of foreign-born inhabitants than the country, with a correspondingly higher birth-rate for this reason, the inhabitants of the cities are probably distributed more favorably in regard to age for the production of children than the country population. It has not been attempted in these registration reports hitherto to present any statements of vital rates for the cities of the State apart from the counties in which they are situated. In the latter part of this report (Part V) such statements may be seen for the years 1890, 1891 and 1892, but at the time of preparation of the present remarks the tables of vital rates by cities are not sufficiently advanced to admit of use in this place. The following are the rates recorded for the counties that contain the larger cities of the State: Bay (Bay City), 25.4; Kent (Grand Rapids), 21.8; Saginaw (Saginaw) 22.1; Wayne (Detroit), 31.9.

In Table 13, Part I, the births returned from each county in 1892 are compared with the corresponding returns for 1891. The State as a whole, including Wayne county, shows a large decrease for 1892, amounting to 4,591 births. There was a decrease of more than this number, namely 4,853 births, in Wayne county alone, due to the fact that the returns of births from Detroit did not contain as many fictitious entries in 1892 as in 1891. Excluding Wayne county, therefore, as we are obliged to do in order to reach the truth in regard to the actual changes that have occurred in the number of births returned for 1892 as compared with the returns of 1891, we have an increase of 262 births for the remainder of the State over the previous year.

As regards the changes in the individual counties, of the State, 46 show a smaller number of births in 1892 than in 1891; 37 show an increase, and one, Arenac county, shows no change The counties indicating the largest amounts of loss are Branch, with 114 fewer births than in 1891: Lenawee, with 125 less; and Monroe, with 128 less. Wayne, with 4,853 less, is, of course, outside the pale of statistical discussion. The counties showing the largest amounts of increase for the year over the numbers returned for 1891 are generally situated in the Upper Peninsula or in the northern part of the State. The list, with the respective numbers gained, are as follows: Calhoun, 137; Gogebic, 177; Houghton, 161; Iron, 209 (this number, however, is not properly included, since the county made no returns at all in 1891); Kent, 202; Manistee, 105; Marquette, 282; Menominee, 103.

The relative numbers of children born, by sex, were about the same as in previous years, 110 males for every 100 females. As shown in Table 17 following, the ratio of

males born is higher in the newly settled counties with a higher general birth-rate than in the older part of the State.

The parent-nativity of children born in the State is a very important subject for consideration. The statistics for 1892 show that almost identically the same numbers (18,368 and 18,344) were born of native-born and foreign-born parents. This does not include the children born to couples in which the father and mother are of different nativities. The number and distribution of such births may be seen in succeeding tables (Tables 18 and 19). Table 20 is very suggestive in this connection. It shows that the percentages of births to foreign-born couples and native-born couples are equal for the first time in the history of Michigan. The tendency to increase in the foreign births and to decrease in the native-born parents has been marked and persistent since 1876. Probably the distress in the Upper Peninsula consequent on the closure of the mines, and the extensive losses of population in consequence thereof, will cause a decrease in the number of births returned from that part of the State for the next year, 1893, and perhaps for several years following. This will cause a temporary decrease in the foreign birth-rate, the Upper Peninsula, with its large proportion of foreign-born citizens at parental ages, being an important contributor thereto.

Whether the changes noted above will continue in the same general direction after the temporary disturbing conditions are removed, or whether a general diminution of immigration into the United States in general and into this State in particular, and the coming to years of manhood and of womanhood of the children of foreign-born as well as of native-born parents, themselves classed as native population and contributing to the births of children "born of native parents," may not altogether reverse the tendency of previous years, are interesting and important questions. One thing should be strongly urged at this point, and that is that the distinction of "native-born" and "foreign-born" is not sufficiently definite for satisfactory study of the problems connected with the life of newly-arrived European races on this soil; and another point of great importance, but which the present form of returns in this State gives no light upon, is the separation of the persons at present classed as "native-born" into those born of native and foreign-born parents. In other words the study of the nativity of the population should be carried back at least one generation in order to secure the best results. This latter distinction is made in the last United States census and will probably be continued through all future ones. It should be included in any modification of the present registration law, and thus important comparisons of the births registered with the corresponding classes of population will become possible.

In Table 11, Part I, a comparison is made between the number of persons who became parents in 1892, distinguishing between parents born in this country and foreign-born parents, and the relative numbers of the native-born and foreign-born inhabitants of Michigan in 1890. In the population figures it will be seen that there are about three times as many native- as foreign-born persons; the number of individuals who became parents are nearly equal for each class. This comparison is somewhat misleading because many more children are included in the native-born than in the foreign-born inhabitants. The usual method of comparing the fertility of different races or groups of population is to state the number of births per 1,000 women of child-bearing age. The figures necessary for such a statement are not yet accessible from the compilation of the last census, but a somewhat similar statement can be given in which the rate is stated for the total number of both sexes between the ages of 15 and 45. There were in Michigan in 1890 685,424 persons of native birth between 15 and 45 years of age, and

314,323 persons of the same ages of foreign-birth. There were 18,368 children born to native couples, or 26.8 per 1,000 population, 15–44, and 18,344 children born to foreign-born couples, or 58.4 per 1,000 population, 15–44. These rates are, of course, only approximate, but answer their purpose sufficiently in showing the much greater fertility of the foreign-born inhabitants of Michigan. As there is a larger proportion of males than females in the foreign than in the native population, the discrepancy between the relative birth-rates would become even more marked if the comparison between the births and the women of child-bearing age could be made. It may be safely said that the fertility of those of foreign birth is nearly three times as great as that of the native-born women.

THE DIMINISHING BIRTH-RATE IN THE UNITED STATES.

Under this title a very suggestive paper by Dr. J. S. Billings, Superintendent of the Mortality Statistics of the Eleventh Census, appeared in the *Forum* for June, 1893. The facts contained therein are so important, and the comparative statements for Michigan and other States are of so much interest, that a brief abstract of the most salient features of the paper is herewith presented. Also, by the courtesy of the publisher of the *Forum* and with Dr. Billings' permission, the diagram showing the progressive diminution of the birth-rates in Europe and in this country during recent years is presented in this connection:

The birth-rate per thousand of population in the United States, according to the census returns, was 30.95 in 1880, and 26.68 in 1890; that is, it has diminished a little over four per thousand.

Although the census returns are not entirely accurate, it may be assumed that they are deficient in about the same degree for 1880 and 1890; an actual decrease in the proportion of births to population may be inferred from these figures.

The birth-rate has diminished in all the States and Territories except in Arizona, Colorado, Montana and New Mexico, in which States the increase probably depends upon a rise in the proportion of women at child-bearing ages. The greatest decrease occurs in the Southern and the least in the Northeastern States. In the following paragraphs the first figures after each State indicate the rate in 1880; the second figures that of 1890:

Maine, 20.72 and 17.79 per 1,000 of population; New Hampshire, 18.90, 18.37; Vermont, 21.71, 18.51; Massachusetts, 23.18, 21.51; Connecticut, 22.20, 21.26; Rhode Island, 23.88, 22.38; New York, 24.93, 23.28; New Jersey, 27.47, 25.16; Pennsylvania, 28.90, 25.69. Average, 25.57, 23.43.

Ohio, 27.94, 24.08; Indiana, 30.00, 25.29; Illinois, 30.68, 27.63; **Michigan, 27.64, 24.80;** Minnesota, 33.53, 29.94; Iowa, 31.01, 26.15; Kansas, 34.83, 28.16; Nebraska, 36.59, 29.22; Wisconsin, 30.22, 27.01; Idaho, 28.46, 27.14; Nevada, 22.07, 16.35; Utah, 41.52, 31.20; Wyoming, 27.13, 21.78. Average, 30.34, 26.47.

Delaware, 28.56, 24.89; Maryland, 30.77, 25.87; District of Columbia, 30.71, 23.07; Virginia, 34.88, 27.12; North Carolina, 36.70, 29.91; South Carolina, 37.51, 31.07; Florida, 34.59, 28.30; Georgia, 36.81, 30.31; Alabama, 37.39, 30.39; Mississippi, 37.85, 30.10; Louisiana, 35.28, 29.57; Texas, 40.74, 31.27; Arkansas, 42.29, 33.78; West Virginia, 35.92, 30.41; Kentucky, 34.34, 29.45; Tennessee, 37.35, 30.60; Missouri, 32.54, 28.72. Average, 36.12, 29.72.

California, 23.24, 19.41; Oregon, 28.52, 22.49; Washington, 29.45, 23.54. Average, 24.49, 20.69.

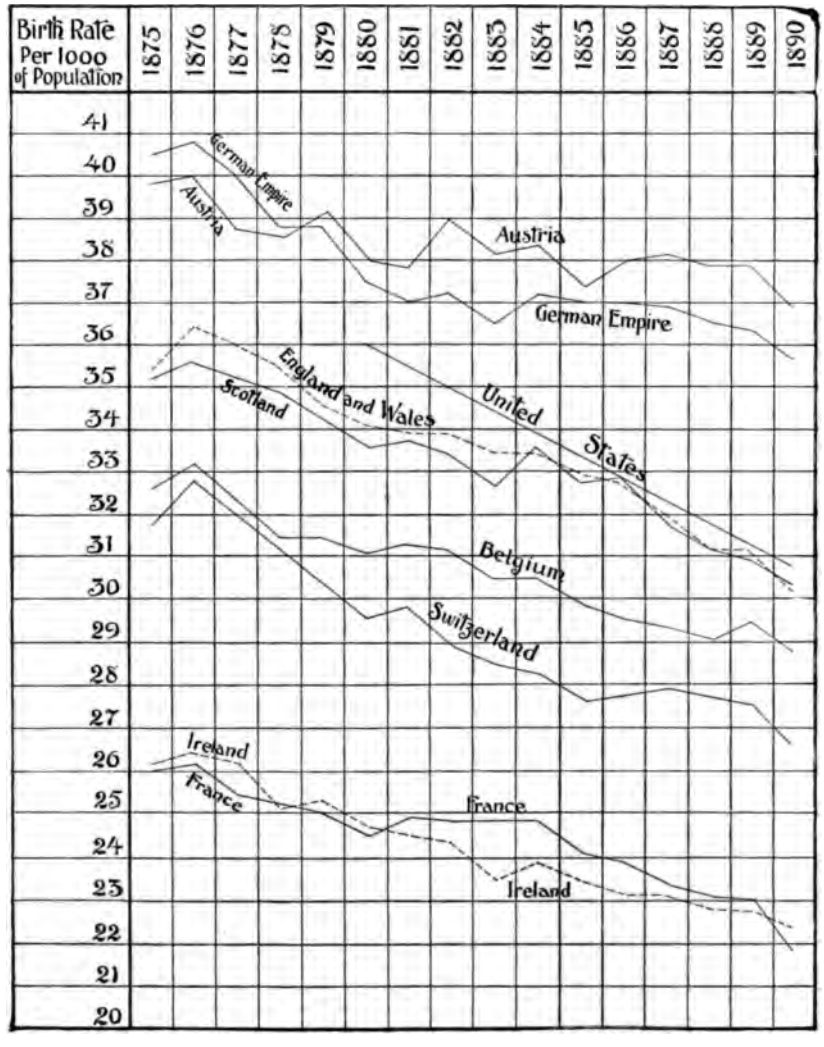
The apparent decrease in birth-rate has been greater in the States having a large colored population; in those States the decrease in the birth-rate has been greater for the colored than for the white inhabitants.

The United States and State censuses agree in indicating a progressive diminution in the number of children under one and under five in this country. For Michigan the figures are as follows: Under one year, 1880, 26.02 per 1,000 population; 1884, 26.74; 1890, 23.38. Under five years, 1880, 126.97; 1884, 121,90; 1890, 113.37. The proportion of children is also diminishing in other countries.

An increase in infantile death-rates exists, according to the census figures, for the whole United States from 1880 to 1890. The rates per 1,000 at same age of deaths

(DIAGRAM II.)

DIMINUTION IN BIRTH-RATES



under one year were in 1880, 103.81; in 1890, 104.08. The increase, though small, is significant, and is corroborated by the facts in those States in which there is accurate registration.

The birth-rates of the United States as deduced from census data are not directly comparable with those of other countries because the rates for the United States are considerably less than the true figures. The actual birth-rate in the United States in 1880 is estimated to have been about 36 per 1,000, and in 1890 it was probably about 31.4 per 1,000. These figures correspond to an increase of 15 per cent in the number of births returned, and agree closely with the birth-rate inferred from the natural increase obtained by deduction of the number of immigrants from the total increase of population compared with an estimated death-rate of 18 per 1,000.

These rates when compared with the changes in European birth-rates during the last fifteen years (see the diagram and also Table 8, p. 17, for numerical values for 1880–92) are very suggestive of a profound disturbance in social relations and in the conditions of life affecting the birth-rate. In both Europe and America the drift of the people from a higher towards a lower natality is very marked. Austria and Germany show a less decided decrease than the other countries during the decade 1880–90, but the total amount of decrease in the fifteen years, 1875–90, is about the same for all. The rate in the United States has fallen more sharply, according to the census, than in Europe. It must be remembered, however, that the inter-census fluctuations of vital rates are not known for this country, and that any cause that depressed the birth-rate for the single year 1889–90 (there was a marked fall in Europe during 1890) would make the apparent decrease in this country too great. While the birth-rate has probably been decreasing in this country, it would seem doubtful that the amount of decrease should be as large as represented.

In discussing the probable reasons for the diminution of the birth-rate in this country, Dr. Billings successively excludes the ideas of diminished power of either sex for the production of children, race deterioration caused by alcohol, syphilis or tobacco, and changes in mode of life of the people *per se*. This latter element, associated with the increasing migration from the country to the city and the increased demand for luxury in daily life, no doubt is influential, but "the most important factor in the change is the deliberate and voluntary avoidance or prevention of child-bearing on the part of a steadily increasing number of married people, who not only prefer to have but few children, but who know how to obtain their wish." Among the reasons for this are (1) the great diffusion of physiological information; (2) lessening of restraint from religious and social opinion; and (3) the greater cost of family life, which leads to the desire to have fewer children in order that they may each be better provided for. "In the struggle for what is deemed a more desirable mode of existence at the present day, marriage is held less desirable, and its bonds less sacred than they were forty years ago." It is becoming less an institution of lasting character whose primary object is the establishment of the family, with all that that term once implied, than a mere social function, easily abrogated when convenience or caprice make such a step seemingly desirable, and one whose lack of permanence and generally unstable character do not make children desirable additions.

As regards the outlook for the future in this country, according to this paper, the probability is that there will be a continued reduction of the birth-rate, and at the same time a somewhat increased mortality depending on the tendency of the people to desert the country for the city. This means a diminished natural increase of population.

The facts relating to the distribution of births in Michigan through the year, and also through the different counties of the State, together with comparisons with preceding years, are shown in the following tables. Analysis is made chiefly with reference to sex, color and nativity of parents.

Synopsis of tables relating to births.

Table.	Births in Michigan, 1892.
	A.—*General discussion of births.*
15.	Births by quarters, 1892, compared with 1890, 1891, and with the average for ten years, 1882-91.
16.	Births by months, 1892, compared with 1890, 1891, and with the average for ten years, 1882-91. The months are arranged in order of the number of births registered in each.
17.	Births, by sex and months, in each county of the State in 1892; also number of births of males to 100 births of females for each county.
18.	By parent-nativity and sex, the number and per cent of children born in Michigan, 1892.
19.	Comparison of parent-nativity of children born in Michigan in 1892 with 1890, 1891, and with the average of ten years, 1882-91.
20.	Comparison of parent-nativity of children born in Michigan in 1891, 1892; with averages of the quinquennial periods 1871-75, 1876-80, 1881-85, 1886-90.
21.	Births, by parent-nativity and sex, for each county of the State in 1892.
	B.—*Still-births, plural and illegitimate births.*
22.	Number of pairs of twins, still-births and illegitimate children born in each county of the State in 1892.
23.	Ratios of still-born, twin and illegitimate children to total births, 1892; compared with 1889-91, and with the average for ten years, 1882-91.
24.	Comparison of the number of pairs of twins and cases of triplets returned in Michigan for ten years, 1883-92, and ratios of these events to total births in each year.
25.	Months of birth, by sex, of still-born, twin and illegitimate children, 1892.
26.	Parent-nativity, by sex, of still-born, twin and illegitimate children, 1892.
27.	Ratios of the sexes (number of males to 100 females) of children born alive, still-births, twins and illegitimates in 1892, compared with 1891 and with the average of ten years, 1882-91.
28.	Comparison of the parent-nativity of plural births in Michigan for ten years, 1883-92.
29.	Comparison of the numbers and rates per 1,000 births of illegitimate children born in Michigan for ten years, 1883-92, and also of the parent-nativities of the mothers of illegitimate children for the same time.
30.	Comparison, by nativity and color, of the number and proportion (to total mothers) of the mothers of still-births in 1892; the same for 1890, 1891, and the average for ten years, 1882-91.
31.	Comparison, by nativity and color, of the number and proportion (to total mothers) of the mothers of twins in 1892; the same for 1890, 1891, and the average for ten years, 1882-91.
32.	Comparison, by nativity and color, of the number and proportion (to total mothers) of the mothers of illegitimate children born in 1892; the same for 1890, 1891, and the average for ten years, 1882-91.
33.	List of townships reporting that no births occurred in 1892.
34.	List of townships that failed to make returns of births for 1892.

Although the number of births recorded for 1892 is much below the number reported for any recent year, and, indeed, only slightly exceeds the average for the ten-year period, 1882–91, the distribution of these births among the quarters of the year appears to be much the same as usual. The third quarter predominates, influenced, doubtless, by the larger number of marriages always recorded in the fourth quarter of the preceding year, the interval between these quarters being the time between conception and birth.

In the earlier reports of this Department, an attempt was made to discover the interdependence of the marriage-rates and birth-rates by months, but with only partial success, owing partly to the imperfect condition of the returns of births and also to the fact that other important factors are concerned in the problem.

It is evident that the marriage-rate affects the birth-rate by months chiefly through

its part in determining the date of birth of the first children born after marriage, and this relation, under our present social conditions, is becoming less definite every year.

Table 15.—*Births, by quarters of the year, for the years 1889–92, and the average for ten years, 1882–91. (Still-births included.)*

Quarter.	1889.		1890.		1891.		1892.		Average for 10 years, 1882–91.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Year	49,272	100.0	52,806	100.0	50,812	100.0	46,221	100.0	44,903	100.0
Quarter ending Mar. 31	10,445	21.2	12,204	23.3	11,506	22.6	10,286	22.3	9,958	22.2
Quarter ending June 30	12,345	25.1	13,288	25.4	12,781	25.2	11,556	25.1	11,302	25.2
Quarter ending Sept. 30	13,160	26.7	13,565	25.9	13,641	26.8	12,185	26.4	12,051	26.8
Quarter ending Dec. 31	13,269	26.9	13,207	25.2	12,829	25.2	12,115	26.2	11,545	25.7
Unknown month	53	.1	42	.1	53	.1	49	.1	47	.1
Average*	12,318	25.0	13,077	25.0	12,703	25.0	11,555	25.0	11,226	25.0

* The number of births in "unknown month" is included in the average.

In this connection, the following observations* based upon Dr. Becker's study of the statistics of the German Empire will be of interest. The influence of the marriage curve upon that for the total number of births is almost imperceptible. Throwing the date of birth back nine months, in order to get the time of conception, these results are arrived at for the period 1872–85: January, 100; February, 99; March, 99; April, 102.5; May, 105.3; June, 103.5; July, 100; August, 97; September, 95; October, 95.7; November, 98; December, 105. Thus the curve swells twice annually. The statistics of conceptions of births leading to illegitimate children, on the other hand, form a curve with but one annual swell, the maximum occurring in May and far above either maximum for total births. From this it is concluded that the seasons have much more direct influence upon births of illegitimate than of legitimate children. Very different is the curve of the still-born. It rises and sinks but once annually, but the height falls in the cold month of January, and the depth in moderate September.

Table 16 shows the order of the months for births as returned. It is well known that by the present system of registration in this State a large number of births entirely fail of record each year. The largest amount of deficiency in this respect is found among the first months of the year, these months being most remote from the date of registration. The returns for December and the latter months of the year are much more perfect, though even with these at least four months elapse between the occurrence of the births and the time of recording them. For this reason it will be observed that if the same number of births actually occurred in each month of the year, the order of the months, *as returned*, would be in the reverse order of their procession in the year. That the latter months predominate in the years compared, and also in the ten-year average, does not appear especially significant in view of the large margin of error involved in the data presented.

* Victor Rosewater in Quarterly Publications of the American Statistical Association, March, 1892, reviewing *Die Jahresschwankungen in der Häufigkeit verschiedener bevölkerungs und moralstatistischer Erscheinungen*, by Dr. K. Becker, *Allgemeines Statistisches Archiv, II, No. 1.*

Table 16.—*Births during the years 1890–92, according to the returns, and the average for ten years, 1882–91, showing number and percentage by months in order of greatest first. (Still-births included.)*

Order.	1890.			1891.			1892.			Average for 10 years, 1882–91.		
	Months.	Number.	Per cent of total.	Months.	Number.	Per cent of total.	Months.	Number.	Per cent of total.	Months.	Number.	Per cent of total.
	Year....	52,806	100.0	Year....	50,812	100.0	Year..	46,221	100.0	Year..	44,903	100.0
1	Dec.	4,765	9.1	Aug.....	4,702	9.3	Dec. ..	4,344	9.4	Aug...	4,132	9.2
2	Aug.....	4,651	8.9	Sept. ...	4,646	9.1	Aug...	4,168	9.0	Sept..	4,069	9.1
3	May	4,568	8.7	May	4,465	8.8	Sept..	4,068	8.8	Dec. ..	4,005	8.9
4	Sept. ...	4,517	8.6	Dec.	4,391	8.6	May ..	3,977	8.6	May ..	3,885	8.7
5	April ...	4,407	8.4	March ..	4,345	8.6	July ..	3,929	8.5	Oct. ..	3,875	8.6
6	July	4,397	8.4	Oct.	4,340	8.5	April..	3,928	8.5	July ..	3,850	8.6
7	March ..	4,356	8.3	July	4,298	8.4	Oct. .	3,918	8.5	April .	3,775	8.4
8	June ...	4,313	8.2	April ...	4,238	8.3	Nov...	3,853	8.3	Mar...	3,759	8.3
9	Nov.....	4,223	8.1	Nov.....	4,098	8.1	Mar...	3,745	8.1	Nov...	3,665	8.2
10	Oct.	4,219	8.1	June....	4,078	8.0	June..	3,681	8.0	June..	3,641	8.1
11	Jan.	4,130	7.9	Jan.	3,629	7.1	Feb. ..	3,315	7.2	Feb. ..	3,102	6.9
12	Feb.	3,718	7.1	Feb.	3,584	7.0	Jan. ..	3,226	7.0	Jan. ..	3,097	6.9
	Unk. ...	42	....	Unk. ...	53	.1	Unk. .	49	.1	Unk. .	47	.1
	Av.*....	4,359	8.3	Av.*....	4,234	8.3	Av.*..	3,852	8.3	Av.*..	3,742	8.3

* Including births in unknown month.

Table 17 gives a detailed statement of the number of births, by sex and months, for each county of the State. In this table is also incorporated a statement of the ratio of male births to 100 female births in each county of the State, and a NOTE appended to the table presents the particulars in regard to the color of children born in Michigan in the year 1892. It gives a full statement, by counties, of the number and sex of all births of color other than white. Only 246 such were reported against a total of 45,938 white children born. The ratio of colored births to total births is 0.53 per cent; of black births (91 in number), 0.19 per cent; of mulatto births (41 in number), 0.09 per cent; and the Indian births (114 in number), 0.25 per cent.

The number of male children born to 100 females, is, for the State, 110. The ratio was 109 to 100 in 1891, and 111 to 100 in the preceding year. This proportion obtains with trifling variations from year to year. Comparison of different portions of the State shows very different ratios, varying from only 54 males to 100 females in Lake county, and 69 males to 100 females in Baraga county, to 288 per 100 in Montmorency, 243 per 100 in Alger, etc. As the returns were very small numerically in these counties, such extreme ratios are probably nothing more than accidental. Thus for the year 1891, the positions of Alger and Baraga counties are reversed, the former having only 67 male births per 100 females, and the latter showing 140 per 100. In general, statistics based upon very small numerical values are subject to great variations from accidental causes, and, if any stress whatever be placed upon them, may become very misleading.

Table 17.—*Exhibiting, by counties and by sex, the number of births returned for the year, and for each month of the year, ending Dec. 31, 1892; also the number of males to 100 females. (Still-births included.)*

State and counties.	Births—males to 100 females.	Sex.	Year, 1892.	Months, 1892.												
				January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
State	110	Total	46,221	3226	3315	3745	3928	3977	3881	3929	4168	4088	3918	3853	4344	49
		Males	24,148	1701	1729	1969	2088	2025	1939	2036	2213	2088	2038	2040	2254	28
		Females	21,995	1522	1584	1771	1831	1947	1732	1888	1950	1990	1874	1803	2083	20
		Unknown	78	3	2	5	9	5	10	5	5	10	6	10	7	1
Alcona	171	Total	111	6	6	14	5	7	7	10	9	9	13	12	13	....
		Males	70	5	5	7	4	5	5	4	4	7	6	8	10	....
		Females	41	1	1	7	1	2	2	6	5	2	7	4	3	....
Alger	243	Total	24	....	....	4	2	2	2	3	1	....	6	3	1	....
		Males	17	....	....	3	1	....	2	2	1	....	5	2	1	....
		Females	7	....	....	1	1	2	....	1	....	....	1	1	....	....
Allegan	106	Total	702	48	59	55	68	72	56	49	69	48	68	49	61	....
		Males	361	23	27	28	35	37	26	28	36	28	41	19	33	....
		Females	340	25	32	27	33	35	30	21	33	20	27	29	28	....
		Unknown	1	....	....	....	....	....	....	....	....	....	....	1	....	....
Alpena	121	Total	459	30	36	32	41	47	36	34	32	45	34	48	41	3
		Males	251	15	22	19	26	24	15	19	17	24	18	26	23	3
		Females	208	15	14	13	15	23	21	15	15	21	16	22	18	....
Antrim	97	Total	226	9	7	18	22	24	24	23	17	26	25	14	16	1
		Males	111	3	2	8	12	11	14	11	8	13	13	8	7	1
		Females	115	6	5	10	10	13	10	12	9	13	12	6	9	....
Arenac	93	Total	135	11	8	10	20	9	8	7	11	11	14	14	12	....
		Males	65	4	4	3	8	6	2	4	10	6	8	5	5	....
		Females	70	7	4	7	12	3	6	3	1	5	6	9	7	....
Baraga	69	Total	91	4	7	6	9	13	11	12	6	8	4	8	3	....
		Males	37	2	4	3	3	3	6	6	5	4	1	....	....	....
		Females	54	2	3	3	6	10	5	6	1	4	3	8	3	....
Barry	110	Total	343	18	30	26	27	32	17	32	33	40	32	22	34	....
		Males	180	9	19	11	15	17	13	17	16	24	14	15	10	....
		Females	163	9	11	15	12	15	4	15	17	16	18	7	24	....
Bay	115	Total	1,539	109	115	134	127	147	112	124	145	115	139	114	158	....
		Males	821	65	61	78	69	70	62	60	72	67	71	60	86	....
		Females	717	44	53	56	58	77	50	64	73	48	68	54	72	....
		Unknown	1	....	1	....	....	....	....	....	....	....	....	....	....	....

Table 17.—CONTINUED.—*Births by counties, months and sex.*

Counties.	Births—males to 100 females.	Sex.	Year, 1892.	Months, 1892.												
				January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
Benzie	133	Total	98	1	8	11	6	4	10	8	15	17	6	7	5	....
		Males	56	1	3	8	3	4	3	6	7	10	4	5	2	....
		Females	42	....	5	3	3	....	7	2	8	7	2	2	3	....
Berrien	108	Total	566	46	41	36	42	45	49	46	61	43	45	49	62	1
		Males	293	21	26	17	22	29	24	22	26	22	24	27	32	1
		Females	271	25	15	19	20	16	25	24	35	21	19	22	30	....
		Unknown	2	....	....	....	....	....	....	....	....	....	2	....	....	....
Branch	120	Total	312	19	21	13	29	27	24	30	37	23	24	27	31	2
		Males	170	11	15	4	21	18	10	12	19	15	13	16	15	1
		Females	142	8	6	9	8	9	14	18	18	13	11	11	16	1
Calhoun	101	Total	742	51	51	46	69	62	59	69	55	71	72	66	71	....
		Males	370	18	22	26	37	28	25	38	34	30	42	36	35	....
		Females	368	33	29	21	32	34	33	31	21	40	30	28	36	....
		Unknown	4	....	....	....	....	....	1	....	....	1	....	2	....	....
Cass	133	Total	247	15	19	19	21	12	26	22	27	23	16	25	21	1
		Males	141	11	7	13	12	8	14	9	19	12	9	16	11	....
		Females	106	4	12	6	9	4	12	13	8	11	7	9	10	1
Charlevoix	108	Total	166	7	13	8	13	16	20	19	14	13	11	11	16	....
		Males	86	4	8	6	9	9	11	11	8	4	4	5	7	....
		Females	80	3	5	2	9	7	9	8	6	9	7	6	9	....
Cheboygan	103	Total	301	14	18	18	31	34	28	20	28	31	23	27	29	....
		Males	152	7	11	11	16	17	19	11	13	13	9	13	8	....
		Females	148	7	7	7	15	17	9	9	15	13	14	15	20	....
		Unknown	1	....	....	....	....	....	....	....	....	....	....	....	1	....
Chippewa	121	Total	267	14	18	19	23	25	14	17	23	24	23	22	29	6
		Males	146	7	11	10	13	16	3	10	10	22	11	13	13	3
		Females	121	7	7	9	10	9	6	7	13	13	12	9	17	3
Clare	104	Total	155	14	15	9	5	17	14	12	15	14	11	9	17	3
		Males	79	5	7	8	3	7	6	7	10	8	3	4	9	3
		Females	76	9	8	1	2	10	8	5	5	6	8	5	8	1
Clinton	94	Total	482	27	35	49	48	30	41	53	53	37	34	41	33	1
		Males	233	14	14	27	15	16	20	24	29	17	16	23	17	1
		Females	249	13	21	22	33	14	21	29	24	20	18	18	16	....
Crawford	117	Total	52	1	3	3	5	3	6	6	7	6	8	....	4	....
		Males	28	1	2	3	2	1	3	1	5	2	5	....	3	....
		Females	24	....	1	....	3	2	3	5	2	4	3	....	1	....

Table 17.—CONTINUED.—***Births by counties, months and sex.***

Counties.	Births—males to 100 females.	Sex.	Year, 1892.	Months, 1892.												
				January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
Delta	97	Total	484	32	43	46	55	49	38	27	45	40	40	34	35	....
		Males	238	22	18	24	31	22	17	16	22	16	19	16	15	....
		Females	245	10	25	22	24	27	21	11	23	24	21	17	20	....
		Unknown	1	....	....	....	....	....	....	....	....	....	....	1	....	....
Dickinson	112	Total	548	34	39	44	39	35	46	53	56	34	49	55	64	....
		Males	290	22	18	21	21	22	25	26	33	17	27	32	26	....
		Females	258	12	21	23	18	13	21	27	23	17	22	23	38	....
Eaton	101	Total	378	32	23	26	25	35	35	31	30	33	35	33	40	....
		Males	189	13	7	17	14	20	16	15	17	17	20	14	19	....
		Females	188	19	16	9	11	15	19	16	13	16	15	18	21	....
		Unknown	1	....	....	....	....	....	....	....	....	....	....	1	....	....
Emmet	101	Total	136	9	8	8	16	14	9	13	11	19	12	9	8	....
		Males	68	5	6	5	8	10	4	4	7	11	2	5	1	....
		Females	67	4	2	3	8	4	5	9	4	8	10	4	6	....
		Unknown	1	....	....	....	....	....	....	....	....	....	....	....	1	....
Genesee	108	Total	603	56	46	38	49	44	46	58	55	52	58	52	49	....
		Males	313	33	24	16	21	20	26	31	28	24	36	29	25	....
		Females	289	23	22	22	28	24	20	27	26	28	22	23	24	....
		Unknown	1	....	....	....	....	....	....	....	1	....	....	....	....	....
Gladwin	86	Total	67	3	4	2	5	6	7	7	2	9	10	7	5	....
		Males	31	2	3	2	1	5	4	3	....	2	4	3	2	....
		Females	36	1	1	....	4	1	3	4	2	7	6	4	3	....
Gogebic	119	Total	678	52	41	71	54	54	51	49	58	61	54	64	65	4
		Males	367	31	19	43	31	28	28	31	32	32	27	32	31	2
		Females	309	21	22	27	23	26	23	18	26	29	27	31	34	2
		Unknown	2	....	....	1	....	....	....	....	....	....	....	1	....	....
Grand Traverse	99	Total	254	8	24	16	31	27	22	26	29	25	20	15	11	....
		Males	126	4	11	10	13	10	9	14	15	12	13	7	8	....
		Females	127	4	13	6	18	17	13	12	14	13	7	7	3	....
		Unknown	1	....	....	....	....	....	....	....	....	....	....	1	....	....
Gratiot	109	Total	473	22	28	32	34	43	40	53	47	58	30	44	42	....
		Males	246	8	15	14	17	27	25	27	19	32	16	26	20	....
		Females	225	14	13	18	16	16	15	26	28	25	14	18	22	....
		Unknown	2	....	....	....	1	....	....	....	....	1	....	....	....	....

Table 17.—CONTINUED.—*Births by counties, months and sex.*

Counties.	Births—males to 100 females.	Sex.	Year, 1892.	Months, 1892.												
				January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
Hillsdale	122	Total	393	14	26	28	29	30	30	41	40	38	39	30	46	2
		Males	216	5	18	18	18	15	12	25	21	23	18	15	27	1
		Females	177	9	8	10	11	15	18	16	19	15	21	15	19	1
Houghton	114	Total	1,691	116	112	164	143	163	142	164	144	117	143	123	158	2
		Males	901	64	53	90	83	89	72	86	85	62	73	60	83	1
		Females	790	52	59	74	60	74	70	78	59	55	70	63	75	1
Huron	106	Total	755	51	46	62	76	57	58	66	73	84	50	59	73	....
		Males	388	27	24	40	36	25	30	34	39	46	28	27	32	....
		Females	366	24	22	22	40	32	28	32	34	38	22	32	40	....
		Unknown	1	....	....	....	....	....	....	....	....	....	....	....	1	....
Ingham	97	Total	699	55	50	46	51	62	58	49	57	66	66	63	74	2
		Males	341	28	23	21	19	26	27	21	31	29	36	31	48	1
		Females	353	27	27	25	32	35	31	27	26	37	28	31	26	1
		Unknown	5	....	....	....	....	1	....	1	....	....	2	1	....	....
Ionia	115	Total	488	30	35	41	36	46	40	46	38	43	44	45	44	....
		Males	260	17	16	21	20	28	21	26	22	22	24	24	19	....
		Females	227	13	19	20	16	18	18	20	16	21	20	21	25	....
		Unknown	1	....	....	....	....	....	1	....	....	....	....	....	....	....
Iosco	94	Total	283	32	25	26	28	27	16	26	27	16	21	14	24	1
		Males	136	23	11	14	10	14	4	16	11	7	8	8	9	1
		Females	144	9	14	12	16	13	12	10	16	9	13	5	15	....
		Unknown	3	....	....	....	2	....	....	....	....	....	....	1	....	....
Iron	117	Total	209	18	21	22	14	19	16	18	7	17	15	14	27	1
		Males	112	9	12	12	7	12	9	10	4	7	5	8	16	1
		Females	96	9	9	10	7	7	6	8	3	10	10	6	11	....
		Unknown	1	....	....	....	....	....	1	....	....	....	....	....	....	....
Isabella	118	Total	442	20	20	39	65	47	40	34	35	33	35	29	45	....
		Males	239	11	9	20	42	23	20	16	21	16	21	16	24	....
		Females	203	9	11	19	23	24	20	18	14	17	14	13	21	....
Jackson	93	Total	662	44	39	41	62	62	50	52	69	61	67	63	52	....
		Males	317	31	22	14	29	26	24	24	33	26	28	32	28	....
		Females	340	13	17	27	33	35	25	27	35	35	39	30	24	....
		Unknown	5	....	....	....	....	1	1	1	1	....	....	1	....	....
Kalamazoo	109	Total	685	44	51	52	53	50	66	51	62	74	55	65	62	....
		Males	357	24	21	25	26	23	38	20	41	40	30	39	30	....
		Females	328	20	30	27	27	27	28	31	21	34	25	26	32	....

Table 17.—CONTINUED.—*Births by counties, months and sex.*

Counties.	Births—males to 100 females.	Sex.	Year, 1892.	Months, 1892.												
				January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
Kalkaska	203	Total	106	3	11	7	5	5	8	11	15	10	10	8	10	3
		Males	71	1	5	5	5	3	7	10	6	8	5	5	8	3
		Females	35	2	6	2	....	2	1	1	9	2	5	3	2	....
Kent	108	Total	2,551	182	191	207	229	193	210	232	224	232	206	197	246	2
		Males	1,320	87	108	103	127	111	110	118	111	113	109	94	129	....
		Females	1,222	94	83	103	101	81	98	112	113	118	97	103	117	2
		Unknown	9	1	....	1	1	1	2	2	....	1	....	....	....	....
Keweenaw	105	Total	117	10	11	11	15	11	9	15	7	5	13	4	6	....
		Males	60	4	5	6	7	7	6	8	3	2	6	4	2	....
		Females	57	6	6	5	8	4	3	7	4	3	7	....	4	....
Lake	54	Total	94	5	6	9	6	11	6	11	10	11	8	7	4	....
		Males	33	2	1	7	2	5	3	2	4	3	2	1	1	....
		Females	61	3	5	2	4	6	3	9	6	8	6	6	3	....
Lapeer	111	Total	377	24	22	33	33	30	34	41	31	38	36	23	32	....
		Males	198	12	12	14	15	17	17	23	21	22	23	9	13	....
		Females	179	12	10	19	18	13	17	18	10	16	13	14	19	....
Leelanau	111	Total	194	16	14	17	14	13	18	27	14	10	23	19	9	....
		Males	102	10	10	11	5	7	8	10	9	4	10	13	5	....
		Females	92	6	4	6	9	6	10	17	5	6	13	6	4	....
Lenawee	105	Total	583	33	49	52	40	42	47	51	48	43	57	67	53	1
		Males	298	19	20	21	21	21	22	29	26	23	29	37	30	....
		Females	285	14	29	31	19	21	25	22	22	20	28	30	23	1
Livingston	71	Total	250	13	19	13	14	28	14	23	28	22	24	29	23	....
		Males	110	8	9	5	6	17	9	5	7	9	13	13	9	....
		Females	140	5	10	8	8	11	5	18	21	13	11	16	14	....
Luce	100	Total	40	....	1	1	....	2	9	4	7	5	2	5	4	....
		Males	20	....	1	1	....	1	5	....	3	4	1	2	2	....
		Females	20	....	....	....	....	1	4	4	4	1	1	3	2	....
Mackinac	145	Total	125	7	7	5	19	8	8	11	12	15	8	13	12	....
		Males	74	5	6	4	10	4	3	5	8	5	5	9	10	....
		Females	51	2	1	1	9	4	5	6	4	10	3	4	2	....
Macomb	123	Total	592	40	34	49	43	49	50	50	55	59	62	48	53	....
		Males	326	21	18	25	27	28	31	25	31	35	32	25	28	....
		Females	266	19	16	24	16	21	19	25	24	24	30	23	25	....

Table 17.—CONTINUED.—*Births by counties, months and sex.*

Counties.	Births: males to 100 females.	Sex.	Year. 1892.	Months. 1892.												
				January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
Manistee	114	Total	732	50	39	67	65	60	58	73	69	54	76	52	75	....
		Males	389	31	21	35	28	32	30	39	36	30	39	26	42	....
		Females	342	19	18	32	37	27	23	34	32	24	37	26	33	....
		Unknown	1	....	....	....	....	1	....	....	....	....	....	....	....	....
Manitou	250	Total	7	....	1	1	....	1	....	1	....	1	1	1	....	....
		Males	5	....	1	1	....	1	....	1	....	1	....	....	....	....
		Females	2	....	....	....	....	....	....	....	....	....	1	1	....	....
Marquette	115	Total	1,526	124	123	134	151	149	111	118	126	114	97	130	149	....
		Males	815	66	66	63	84	71	60	72	70	60	46	69	88	....
		Females	711	58	57	71	67	78	51	46	56	54	51	61	61	....
Mason	125	Total	454	28	37	39	38	42	33	37	46	42	35	36	41	....
		Males	261	18	24	23	20	26	19	19	27	29	18	19	24	....
		Females	193	10	13	16	18	16	14	18	19	13	22	17	17	....
Mecosta	110	Total	357	24	26	31	23	33	34	33	32	31	25	29	34	2
		Males	187	18	13	18	14	11	17	22	15	18	10	15	15	1
		Females	170	6	13	13	9	22	17	11	17	13	15	14	19	1
Menominee	114	Total	657	49	45	44	49	64	62	55	61	55	45	53	74	1
		Males	350	24	21	20	25	39	31	31	31	29	24	35	40	....
		Females	306	25	24	24	24	25	31	24	30	26	20	18	34	1
		Unknown	1	....	....	....	....	....	....	....	....	....	1	....	....	....
Midland	95	Total	205	10	11	13	19	24	16	10	25	26	13	13	20	....
		Males	100	2	6	11	7	12	6	3	14	11	9	9	10	....
		Females	105	8	5	2	12	12	10	7	11	15	4	9	10	....
Missaukee	86	Total	164	14	10	13	13	18	12	8	14	22	10	11	19	....
		Males	76	3	4	6	6	11	6	3	5	13	7	4	8	....
		Females	88	11	6	7	7	7	6	5	9	9	3	7	11	....
Monroe	99	Total	609	32	44	37	59	49	65	48	73	33	68	57	44	....
		Males	302	14	20	13	27	22	29	34	37	12	34	31	24	....
		Females	306	18	24	19	31	27	36	14	36	21	34	26	20	....
		Unknown	1	....	....	....	1	....	....	....	....	....	....	....	....	....
Montcalm	99	Total	539	36	24	44	52	50	51	50	45	50	42	45	50	....
		Males	268	18	14	23	24	26	24	24	25	26	19	23	22	....
		Females	271	18	10	21	28	24	27	26	20	24	23	22	28	....
Montmorency	288	Total	31	1	1	1	5	3	2	3	2	3	7	....	3	....
		Males	23	1	1	1	5	1	....	3	1	2	6	....	2	....
		Females	8	....	....	....	....	2	2	....	1	1	1	....	1	....

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Table 17.—CONTINUED.—*Births by counties, months and sex.*

Counties.	Births—males to 100 females.	Sex.	Year, 1892.	Months, 1892.												
				January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
Muskegon	111	Total	1,023	61	80	66	78	86	83	90	114	106	77	96	86	....
		Males	535	26	40	37	42	46	47	52	60	59	41	44	41	....
		Females	481	35	39	28	35	39	33	38	54	47	36	52	45	....
		Unknown	7	....	1	1	1	1	3	....	....	....	....	....	....	....
Newaygo	110	Total	313	17	13	27	30	24	35	35	32	27	24	24	24	1
		Males	164	12	7	14	12	10	16	21	21	11	13	16	11	....
		Females	149	5	6	13	18	14	19	14	11	16	11	8	13	1
Oakland	131	Total	512	31	41	56	36	47	37	47	40	57	41	37	42	....
		Males	290	18	26	35	24	22	21	26	23	27	24	23	21	....
		Females	222	13	15	21	12	25	16	21	17	30	17	14	21	....
Oceana	108	Total	301	20	18	25	28	39	19	30	30	22	26	23	21	....
		Males	156	7	10	11	17	17	12	16	19	14	11	11	11	....
		Females	145	13	8	14	11	22	7	14	11	8	15	12	10	....
Ogemaw	145	Total	108	4	5	11	11	4	8	*8	9	13	13	11	11	....
		Males	64	1	2	9	9	1	5	4	6	8	5	6	8	....
		Females	44	3	3	2	2	3	3	4	3	5	8	5	3	....
Ontonagon	94	Total	68	4	6	7	4	9	7	9	6	5	4	5	2	....
		Males	33	....	1	4	3	4	3	4	4	4	3	3	....	....
		Females	35	4	5	3	1	5	4	5	2	1	1	2	2	....
Osceola	107	Total	314	26	16	15	29	33	37	28	21	32	25	26	24	2
		Males	162	17	6	10	11	14	21	15	12	15	9	15	15	2
		Females	152	9	10	5	18	19	16	13	9	17	16	11	9	....
Oscoda	210	Total	31	1	1	2	4	1	2	4	4	6	2	1	3	....
		Males	21	....	....	1	3	1	2	3	3	2	2	1	3	....
		Females	10	1	1	1	1	....	....	1	1	4	....	....	....	....
Otsego	126	Total	52	2	1	6	4	7	8	4	8	3	....	5	4	....
		Males	29	1	1	3	2	5	4	1	4	1	....	4	3	....
		Females	23	1	....	3	2	2	4	3	4	2	....	1	1	....
Ottawa	99	Total	824	49	69	67	67	75	60	72	72	91	64	69	68	1
		Males	409	31	33	28	38	29	36	35	39	42	34	30	34	....
		Females	414	18	36	39	29	46	24	37	33	48	30	39	34	1
		Unknown	1	....	....	....	....	....	....	....	....	1	....	....	....	....
Presque Isle	95	Total	166	12	11	20	15	15	21	6	18	15	12	8	13	....
		Males	81	6	7	9	11	6	10	4	2	7	7	5	7	....
		Females	85	6	4	11	4	9	11	2	16	8	5	3	6	....

Table 17.—CONTINUED.—*Births by counties, months and sex.*

Counties.	Births—males to 100 females.	Sex.	Year, 1892.	Months, 1892.												
				January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
Roscommon	77	Total	39	1	3	2	7	3	3	2	4	2	6	3	3	----
		Males	17	---	1	1	3	1	3	----	2	1	3	1	1	----
		Females	22	1	2	1	4	2	----	2	2	1	3	2	2	----
Saginaw	114	Total	1,918	141	133	181	182	161	151	149	178	173	155	149	165	----
		Males	1,021	76	74	90	102	82	78	73	100	92	79	82	93	----
		Females	894	65	59	91	80	79	73	76	78	78	76	67	72	----
		Unknown	3	----	----	----	----	----	----	----	----	3	----	----	----	----
Sanilac	118	Total	699	40	47	66	74	67	58	51	62	56	55	71	52	----
		Males	377	24	28	35	39	34	29	28	35	27	31	37	30	----
		Females	319	15	19	31	34	33	29	23	26	29	24	34	22	----
		Unknown	3	1	----	----	1	----	----	----	1	----	----	----	----	----
Schoolcraft	95	Total	144	8	7	14	9	14	10	9	11	18	15	13	16	----
		Males	70	1	4	8	5	5	4	4	6	9	8	8	8	----
		Females	74	7	3	6	4	9	6	5	5	9	7	5	8	----
Shiawassee	109	Total	441	21	21	31	34	36	40	43	39	47	35	40	54	----
		Males	229	13	13	12	19	15	21	15	19	24	26	22	30	----
		Females	211	8	8	19	15	21	19	27	20	23	9	18	24	----
		Unknown	1	----	----	----	----	----	----	1	----	----	----	----	----	----
St. Clair	103	Total	1,040	56	68	75	89	71	81	93	109	87	113	98	99	1
		Males	526	27	32	39	47	34	39	51	48	38	58	65	48	----
		Females	513	29	36	36	42	37	42	42	61	49	55	33	51	----
		Unknown	1	----	----	----	----	----	----	----	----	----	----	----	----	1
St. Joseph	109	Total	341	21	25	27	25	29	40	31	33	26	27	39	18	----
		Males	178	9	12	14	14	10	24	20	20	9	16	20	10	----
		Females	163	12	13	13	11	19	16	11	13	17	11	19	8	----
Tuscola	109	Total	542	40	41	30	44	47	48	49	43	54	58	43	43	2
		Males	282	16	20	14	28	22	24	26	24	28	29	25	25	1
		Females	259	24	21	16	16	25	24	23	19	25	29	18	18	1
		Unknown	1	----	----	----	----	----	----	----	----	1	----	----	----	----
Van Buren	93	Total	448	28	25	40	37	44	29	47	61	40	37	34	26	----
		Males	215	14	12	25	16	24	11	20	29	21	16	17	10	----
		Females	230	13	13	14	21	20	18	27	32	19	21	17	15	----
		Unknown	3	1	----	1	----	----	----	----	----	----	----	----	1	----
Washtenaw	133	Total	585	44	45	47	60	49	39	55	42	36	46	43	79	----
		Males	331	29	29	23	38	24	26	26	19	22	34	16	45	----
		Females	249	15	16	23	22	25	13	29	22	14	11	27	32	----
		Unknown	5	----	----	1	----	----	----	----	1	----	1	----	2	----

Table 17.—CONCLUDED.—*Births by counties, months and sex.*

Counties.	Births—males to 100 females.	Sex.	Year, 1892.	Months, 1892.												
				January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
Wayne	112	Total	8,779	768	698	734	657	712	622	663	717	770	742	760	934	2
		Males	4,624	400	377	384	353	360	348	344	382	387	383	414	491	1
		Females	4,149	368	321	350	303	352	273	319	334	381	359	346	442	1
		Unknown	6	----	----	----	1	----	1	----	1	2	----	----	1	----
Wexford	109	Total	277	14	24	34	29	21	17	32	29	22	22	17	15	1
		Males	144	4	8	23	14	15	13	15	16	7	12	8	8	1
		Females	132	10	16	11	14	6	4	17	13	15	10	9	7	----
		Unknown	1	----	----	----	1	----	----	----	----	----	----	----	----	----

NOTE TO TABLE 17.—COLOR OF CHILDREN BORN IN MICHIGAN, 1892.

Out of 46,221 births, the total number reported for the year, 45,988 were of white parentage. Only 246 children were given as belonging to other colors or races, of whom 91 were black, 41 mulatto and 114 Indian (including 23 halfbreeds). There were 37 of unspecified color. The proportion of white children is so large, constituting 99.39 per cent of the total births, that any deductions in regard to comparative birth-rates in the white and colored population of this State must, necessarily, be of very slight importance and of very doubtful value. Below are given, with specification of sex, the number of births of colors other than white in each county of the State:

BLACK BIRTHS.—Total for State, 91; 59 males, 30 females, 2 of unknown sex. By counties—Wayne, 19 males, 5 females; Cass, 12 males, 6 females; Kent, 5 males, 1 female; Calhoun, 4 males, 1 female; Berrien, Van Buren, each 3 males, 2 females; Washtenaw, 3 males, 2 females, 2 of unknown sex; Lenawee, 2 males, 2 females; Jackson, 2 females; Ionia, Saginaw, each 1 male, 1 female; Benzie, Grand Traverse, Monroe, Oakland, Shiawassee, St. Joseph, each 1 male; Gratiot, Isabella, Kalamazoo, Mecosta, Montcalm, each 1 female.

MULATTO BIRTHS.—Total for State, 41; 19 males, 22 females. By counties—Ingham, 2 males, 6 females; Wayne, 3 males, 1 female; Cass, 2 males, 2 females; Van Buren, 2 males, 1 female; Genesee, Mecosta, each 2 females; Clinton, Kalamazoo, St. Clair, each 1 male and 1 female; Allegan, Berrien, Charlevoix, Gratiot, Isabella, Jackson, Lenawee, each 1 male; Barry, Macomb, Saginaw, each 1 female.

INDIAN BIRTHS.—Total for State, 114; 50 males, 63 females, 1 of unknown sex. There are included in this number 9 males and 13 females of mingled white and Indian parentage. By counties—Emmet, 15 males, 11 females, 1 of unknown sex; Baraga, 6 males, 18 females (5 of each sex halfbreeds); Isabella, 7 males, 5 females; Mackinac, 7 males (4 halfbreeds), 3 females (2 halfbreeds) Saginaw, 3 males and 3 females; Leelanau, 3 males and 5 females; Alcona, 3 males, 1 female; Chippewa, 2 males, 4 females (1 halfbreed); Calhoun, 1 male, 2 females; Charlevoix, 3 females (2 halfbreeds); Mason, 3 females (1 halfbreed); Oceana, 3 females; Arenac, Delta, Dickinson, each 1 male; Allegan, Menominee, each 1 female (halfbreed).

BIRTHS OF UNKNOWN COLOR.—Total for State, 37; 18 males, 13 females and 6 of unspecified sex. By counties—Washtenaw, 13 males, 8 females; Branch, 2 males, 4 females; Mackinac, 1 male, 1 female; Allegan, Jackson, each 1 male; Wayne, 3 of unknown sex; Gratiot, Saginaw, Wexford, each 1 of unknown sex.

The four tables following relate to the important subject of the parent-nativity of children born in this State during the year 1892, together with such comparisons with the results of previous years as are necessary to a full understanding of the subject. In discussing this question in the last report it was noted that the percentage of children of native-born parents had diminished with considerable unifo 1881, while the percentage of those born of foreign-born parents had pr

increased. Attention was called to the "probability, if the present rate of change continues, of the latter being in excess in another year for the first time in the history of the State registration." This prediction has been so far justified, that the percentages of native-born and foreign-born parents of children are found to be the same (39.7 per cent) for the year. It is not probable that this change will progress in the same manner during 1893, nor, perhaps, for some years, as the closing of the mines during the winter of 1893-94 and the financial distress prevailing in the Upper Peninsula in consequence thereof, have greatly diminished the number of marriages from that portion of the State, which has been accustomed to furnish the largest number of marriages of foreign-born persons, together with a high birth-rate for children of foreign-born parents based thereon.

Table 18 exhibits certain facts, with detail of sex, in relation to the number and proportion of births of each parent-nativity for the year 1892. As has been already stated, the percentages of children born of parents both of whom are native-born or both foreign-born, are exactly equal for this year, being 39.7 per cent of the total births. There is still a slightly larger proportion of children born having at least one parent native-born (58.2 per cent) than there is of those with one or both parents foreign-born (57.5 per cent), but a similar diminution in the former and increase in the latter may be noted in comparing a series of years.

Table 18.—*Showing, by sex, the parent-nativity of children born in Michigan during the year 1892, according to the returns.*

Nativity of parents of children born, 1892.	Total births, 1892.							
	Number.				Per cent of total.			
	Totals.	Males.	Females.	Unknown.	Totals.	Males.	Females.	Unknown.
All nativities	46,221	24,148	21,995	78	100.0	100.0	100.0	100.0
Both parents native-born	18,368	9,569	8,766	33	39.7	39.6	39.9	42.3
Both parents foreign-born	18,344	9,605	8,723	16	39.7	39.8	39.7	20.5
Foreign father and native mother	5,061	2,647	2,408	6	10.9	11.0	10.9	7.7
Foreign mother and native father	2,922	1,559	1,360	3	6.3	6.5	6.2	3.8
Unknown mother, father native	277	141	135	1	.6	.6	.6	1.3
Unknown mother, father foreign	174	101	71	2	.4	.4	.3	2.6
Unknown father, mother native	270	129	137	4	.6	.5	.6	5.1
Unknown father, mother foreign	96	46	50	.....	.3	.2	.2	.....
Both unknown	709	351	345	13	1.7	1.5	1.6	16.7
One or both native*	26,898	14,045	12,806	47	58.2	58.2	58.2	60.3
One or both foreign*	26,597	13,958	12,612	27	57.5	57.8	57.3	34.6

* Including cases where nativity of either parent is unknown.

One other feature appears in this table, although the evidence is not very decisive, namely, the larger proportion of male children born to parents of foreign birth, and the larger proportion of females born to native couples, comparison being made in each case with the percentage of total births, by sex, to each nativity. This relation appears to hold true in examining previous years.

These changes are also shown in Table 19, the year 1892 being compared with 1890 and 1891, and also with the average for the previous ten years, 1882-91. The percentage of native-born fathers is diminishing, as is also that of the native-born mothers, but the latter is still in excess of the percentage of foreign-born mothers. The rise in the proportion of foreign-born fathers continues for the years 1891 and 1892.

Table 19.—*Parent-nativity of children born in Michigan for each of the years 1890–92, and the average for ten years, 1882–91.*

Nativity of parents of children born.		1890.		1891.		1892.		Average for 10 years, 1882–91.	
		Number.	Per cent of total.	Number.	Per cent of total.	Number.	Per cent of total.	Number.	Per cent of total.
All nativities		52,306	100.0	50,812	100.0	46,221	100.0	44,908	100.0
Both native-born		21,866	41.8	20,425	40.2	15,368	39.7	19,109	42.6
Both foreign-born		20,076	38.4	20,272	39.8	18,344	39.7	16,789	37.4
Foreign father and native mother		5,643	10.8	5,428	10.8	5,061	10.9	4,941	11.0
Foreign mother and native father		3,157	6.0	3,119	6.1	2,922	6.3	2,784	6.2
One or both unknown		1,564	3.0	1,568	3.1	1,526	3.3	1,280	2.9
One or both parents native*		30,666	58.4	28,972	57.0	26,351	57.0	26,884	59.8
One or both parents foreign*		28,876	55.2	28,819	56.8	26,327	57.0	23,201	51.7
Father	Native	25,269	48.3	23,837	46.9	21,567	46.7	22,060	49.1
	Foreign	25,909	49.5	25,942	51.0	23,579	51.0	21,837	48.6
	Unknown	1,128	2.2	1,033	2.1	1,075	2.3	1,006	2.3
Mother	Native	27,756	53.1	26,048	51.3	23,699	51.3	24,246	54.0
	Foreign	23,331	44.6	23,483	46.2	21,362	46.2	19,660	43.8
	Unknown	1,219	2.3	1,281	2.5	1,160	2.5	997	2.2

* Excluding cases where nativity of either parent is unknown.

In Table 20 these changes are studied for a longer period of time by means of quinquennial averages, with which the ratios of the individual years 1891 and 1892 are compared. This table should be compared with the similarly constituted one under the subject of marriages, where analogous changes may be seen to have taken place,

although the ratios of marriages of native-born persons are much larger absolutely. Those of foreign-born persons consequently appear to be much more prolific, since a smaller percentage of marriages produces an equal percentage of children.

Table 20.—*Parentage of children, by nativity, born in Michigan during the years 1891 and 1892; compared with averages for the quinquennial periods, 1871-75, 1876-80, 1881-85, 1886-90.*

Years and periods averaged.	Nativity of parents.				
	Both native-born.	Both foreign-born.	Native father and foreign mother.	Foreign father and native mother.	One or both unknown.
Average, 1871-75	44.8	34.3	5.2	9.5	6.2
Average, 1876-80	46.0	34.1	5.7	11.0	3.1
Average, 1881-85	43.7	35.5	6.2	11.5	2.9
Average, 1886-90	42.7	37.6	6.2	10.7	2.8
Year 1891	40.2	39.8	6.1	10.8	3.1
Year 1892	39.7	39.7	6.3	10.9	3.3

Table 21 exhibits for each county the nativity of the parents of children born in 1892. For the State, the number of parents both native-born is very slightly in excess of those of foreign birth, but in many counties, especially those of the Upper Peninsula and those containing large cities, the parents of foreign birth greatly outnumber the native-born parents. In the southern portion of the State and among the older settled counties where the birth-rate is small, the reverse is generally true, and the foreign-born parents are in the minority.

Among the counties showing a large predominance of births of children to parents, both of whom were native-born, are Hillsdale, 361 to 5; Cass 212 to 3; Eaton, 318 to 10; Van Buren, 379 to 17; Barry, 289 to 17; Gratiot, 365 to 20, and Branch, 264 to 15. All of these counties, with the exception of Eaton and Gratiot counties, belong to the list of counties with a decreasing population in the last inter-census period and with a low total birth-rate.

In decided contrast to the above, the following counties with a marked excess of births of foreign parentage may be cited: Dickinson, 463 to 39; Gogebic, 496 to 60; Houghton, 1,199 to 204; Marquette, 1,152 to 165; Presque Isle, 126 to 18.

Wayne county, including the city of Detroit, shows a large excess of foreign couples who were parents in 1892 over native couples; the numbers are 5,135 and 2,027 respectively, which should be understood, as in all the preceding cases, to include only cases in which both parents are of the same nativity. An excess of foreign parents may be noted in Kent (Grand Rapids) and Bay (Bay City) counties, but not in Saginaw, in which native parents are slightly in the majority.

Table 21.—*Exhibiting for the State and counties of Michigan, by sex, the parent-nativity of children returned for the year 1892. (Still-births included.)*

State and counties.	Sex.	Children born, 1892.	Nativity of parents of children born in 1892.								
			Both native-born.	Both foreign-born.	Foreign father and native mother.	Foreign mother and native father.	Mother unknown. Father. Native.	Mother unknown. Father. Foreign.	Father unknown. Mother. Native.	Father unknown. Mother. Foreign.	Both unknown.
State	Total	46,221	18,368	18,344	5,061	2,922	277	174	270	96	709
	Males	24,148	9,569	9,605	2,647	1,559	141	101	129	46	351
	Females	21,995	8,766	8,723	2,408	1,360	135	71	137	50	345
	Unknown	78	33	16	6	3	1	2	4	.....	13
Alcona	Total	111	34	51	17	5	.....	.....	4	.....	.....
	Males	70	23	32	7	5	.....	.....	3	.....	.....
	Females	41	11	19	10	.....	.....	.....	1	.....	.....
Alger	Total	24	7	9	5	1	.....	1	.....	.....	1
	Males	17	5	6	4	1	.....	1	.....	.....	.....
	Females	7	2	3	1	.....	.....	.....	.....	.....	1
Allegan	Total	702	451	68	72	51	37	13	2	.....	8
	Males	361	227	35	38	27	18	10	2	.....	4
	Females	340	224	32	34	24	19	3	.....	.....	4
	Unknown	1	.....	1	.....	.....	.....	.....	.....	.....	.....
Alpena	Total	459	65	315	44	27	1	.....	3	2	2
	Males	251	40	160	29	19	1	.....	1	1	.....
	Females	208	25	155	15	8	.....	.....	2	1	2
Antrim	Total	226	102	63	34	25	.....	.....	1	.....	1
	Males	111	51	31	15	12	.....	.....	1	.....	1
	Females	115	51	32	19	13	.....	.....	.....	.....	.....
Arenac	Total	135	26	77	24	8	.....	.....	.....	.....	.....
	Males	65	13	35	13	4	.....	.....	.....	.....	.....
	Females	70	13	42	11	4	.....	.....	.....	.....	.....
Baraga	Total	91	24	46	17	3	1	.....	.....	.....	.....
	Males	37	7	21	8	1	.....	.....	.....	.....	.....
	Females	54	17	25	9	2	1	.....	.....	.....	.....
Barry	Total	343	289	17	24	8	.....	.....	4	.....	1
	Males	180	157	5	15	1	.....	.....	1	.....	1
	Females	163	132	12	9	7	.....	.....	3	.....	.....
Bay	Total	1,539	369	760	240	144	4	4	7	2	9
	Males	821	212	411	103	83	1	2	4	1	4
	Females	717	156	349	137	61	3	2			
	Unknown	1	1	.....	.....	.....	.....	.....			

Table 21.—CONTINUED.—*Births by counties, parent-nativity and sex.*

Counties.	Sex.	Children born, 1892.	Nativity of parents of children born in 1892.								
			Both native-born.	Both foreign-born.	Foreign father and native mother.	Foreign mother and native father.	Mother unknown. Father. Native.	Mother unknown. Father. Foreign.	Father unknown. Mother. Native.	Father unknown. Mother. Foreign.	Both unknown.
Benzie	Total	98	47	25	13	7	1	.....	1	.....	4
	Males	56	25	16	6	4	.....	.....	1	.....	4
	Females	42	22	9	7	3	1	.....	.....	.....	.....
Berrien	Total	566	375	109	37	16	3	2	5	3	16
	Males	293	196	53	20	11	1	1	.....	1	10
	Females	271	177	56	17	5	2	1	5	2	6
	Unknown	2	2	.....	.....	.....	.....	.....	.....	.....	.....
Branch	Total	312	264	15	12	10	5	.....	5	.....	1
	Males	170	147	7	6	7	1	.....	2	.....	.....
	Females	142	117	8	6	3	4	.....	3	.....	1
Calhoun	Total	742	538	85	63	25	7	4	8	.....	12
	Males	370	272	43	31	9	4	.....	5	.....	6
	Females	368	263	41	32	16	3	4	3	.....	6
	Unknown	4	3	1	.....	.....	.....	.....	.....	.....	.....
Cass	Total	247	212	3	4	7	16	1	2	.....	2
	Males	141	122	2	3	3	8	.....	2	.....	1
	Females	106	90	1	1	4	8	1	.....	.....	1
Charlevoix	Total	166	75	44	28	15	.....	.....	3	.....	1
	Males	86	35	29	14	6	.....	.....	1	.....	1
	Females	80	40	15	14	9	.....	.....	2	.....	.....
Cheboygan	Total	301	77	141	49	32	.....	.....	.....	.....	2
	Males	152	41	69	24	17	.....	.....	.....	.....	1
	Females	148	36	71	25	15	.....	.....	.....	.....	1
	Unknown	1	.....	1	.....	.....	.....	.....	.....	.....	.....
Chippewa	Total	267	28	180	23	16	4	10	2	1	3
	Males	146	19	94	14	8	.....	7	2	1	1
	Females	121	9	86	9	8	4	3	.....	.....	2
Clare	Total	155	67	43	28	13	1	1	.....	.....	2
	Males	79	38	21	12	6	.....	1	.....	.....	1
	Females	76	29	22	16	7	1	.....	.....	.....	1
Clinton	Total	482	366	30	48	26	4	2	1	.....	5
	Males	238	175	15	29	9	1	1	1	.....	2
	Females	249	191	15	19	17	3	1	.....	.....	3

Table 21.—CONTINUED.—*Births by counties, parent-nativity, and sex.*

Counties.	Sex.	Children born, 1892.	Nativity of parents of children born in 1892.								
			Both native-born.	Both foreign-born.	Foreign father and native mother.	Foreign mother and native father.	Mother unknown. Father.		Father unknown. Mother.		Both unknown.
							Native.	Foreign.	Native.	Foreign.	
Crawford	Total	52	19	18	6	6	2	.....	1	.....	.....
	Males	28	11	11	2	1	2	.....	1	.....	.....
	Females	24	8	7	4	5	.....	.....	.....	.....	.....
Delta	Total	484	104	255	83	23	2	1	.....	1	15
	Males	238	40	123	49	14	2	1	.....	1	8
	Females	245	64	131	34	9	.....	.....	.....	.....	7
	Unknown	1	.....	1	.....	.....	.....	.....	.....	.....	.....
Dickinson	Total	548	39	463	29	11	.....	1	.....	.....	5
	Males	290	21	248	13	6	.....	1	.....	.....	1
	Females	258	18	215	16	5	.....	.....	.....	.....	4
Eaton	Total	378	318	10	18	17	7	2	3	.....	3
	Males	189	161	4	6	9	6	1	2	.....	.....
	Females	188	157	6	12	8	.....	1	1	.....	3
	Unknown	1	.....	.....	.....	.....	1	.....	.....	.....	.....
Emmet	Total	136	79	28	16	7	.....	.....	4	.....	2
	Males	68	39	14	6	4	.....	.....	3	.....	2
	Females	67	39	14	10	3	.....	.....	1	.....	.....
	Unknown	1	1	.....	.....	.....	.....	.....	.....	.....	.....
Genesee	Total	603	429	52	66	45	.....	.....	2	.....	9
	Males	313	217	28	39	24	.....	.....	.....	.....	5
	Females	289	211	24	27	21	.....	.....	2	.....	4
	Unknown	1	1	.....	.....	.....	.....	.....	.....	.....	.....
Gladwin	Total	67	22	22	18	4	.....	.....	1	.....	.....
	Males	31	8	11	10	2	.....	.....	.....	.....	.....
	Females	36	14	11	8	2	.....	.....	1	.....	.....
Gogebic	Total	678	60	496	63	27	2	10	2	2	16
	Males	367	33	267	36	11	2	6	2	1	9
	Females	309	27	229	26	16	.....	4	.....	1	6
	Unknown	2	.....	.....	1	.....	.....	.....	.....	.....	1
Grand Traverse	Total	254	134	44	33	28	8	1	3	1	2
	Males	126	70	20	19	8	5	.....	2	.....	2
	Females	127	63	24	14	20	3	1	1	1	.....
	Unknown	1	1	.....	.....	.....	.....	.....	.....	.....	.....

Table 21.—CONTINUED.—***Births by counties, parent-nativity, and sex.***

Counties.	Sex.	Children born, 1892.	Nativity of parents of children born in 1892.								
			Both native-born.	Both foreign-born.	Foreign father and native mother.	Foreign mother and native father.	Mother unknown. Father. Native.	Mother unknown. Father. Foreign.	Father unknown. Mother. Native.	Father unknown. Mother. Foreign.	Both unknown.
Gratiot	Total	473	365	20	40	34	6	2	4	.....	2
	Males	246	198	8	22	13	1	2	2	.....	.....
	Females	225	166	11	18	21	5	.....	2	.....	2
	Unknown	2	1	1	.....	.....	.....	.....	.....	.....	.....
Hillsdale	Total	393	361	5	12	4	2	1	2	.....	6
	Males	216	199	3	5	4	2	.....	1	.....	2
	Females	177	162	2	7	.....	.....	1	1	.....	4
Houghton	Total	1,691	204	1,199	234	49	.....	3	.....	.....	2
	Males	901	111	634	128	25	.....	2	.....	.....	1
	Females	790	93	565	106	24	.....	1	.....	.....	1
Huron	Total	755	121	398	143	88	1	1	2	.....	1
	Males	388	58	210	70	47	.....	1	1	.....	1
	Females	366	63	188	72	41	1	.....	1	.....	.....
	Unknown	1	.....	.....	1	.....	.....	.....	.....	.....	.....
Ingham	Total	699	438	126	51	35	8	1	4	.....	36
	Males	341	204	65	25	16	6	.....	1	.....	24
	Females	353	231	61	26	19	2	1	3	.....	10
	Unknown	5	3	.....	.....	.....	.....	.....	.....	.....	2
Ionia	Total	488	357	30	47	27	4	4	11	7	1
	Males	260	187	21	21	12	4	2	9	3	1
	Females	227	170	9	25	15	.....	2	2	4	.....
	Unknown	1	.....	.....	1	.....	.....	.....	.....	.....	.....
Iosco	Total	283	44	137	52	30	3	12	.....	1	4
	Males	136	22	54	30	16	2	9	.....	.....	3
	Females	144	22	83	21	14	1	1	.....	1	1
	Unknown	3	.....	.....	1	.....	.....	2	.....	.....	.....
Iron	Total	209	22	126	24	4	.....	7	1	2	23
	Males	112	10	69	14	2	.....	3	1	.....	13
	Females	96	12	57	10	2	.....	4	.....	2	9
	Unknown	1	.....	.....	.....	.....	.....	.....	.....	.....	1
Isabella	Total	442	221	102	68	40	7	1	4	.....	1
	Males	239	115	58	38	22	2	1	2	.....	1
	Females	203	106	44	28	18	5	.....	2	.....	.....

Table 21.—CONTINUED.—*Births by counties, parent-nativity and sex.*

Counties.	Sex.	Children born, 1892.	Nativity of parents of children born in 1892.								
			Both native-born.	Both foreign-born.	Foreign father and native mother.	Foreign mother and native father.	Mother unknown.		Father unknown.		Both unknown.
							Father.		Mother.		
							Native.	Foreign.	Native.	Foreign.	
Jackson	Total	662	418	99	40	20	23	3	7	.....	52
	Males	317	204	41	26	9	9	3	3	.....	22
	Females	340	214	57	14	11	14	.....	4	.....	26
	Unknown	5	.....	1	.....	.....	.....	.....	.....	.....	4
Kalamazoo	Total	685	400	162	69	45	.....	2	3	.....	4
	Males	357	211	79	40	24	.....	1	.....	.....	2
	Females	328	189	83	29	21	.....	1	3	.....	2
Kalkaska	Total	106	61	11	24	7	2	1	.....	.....	.....
	Males	71	41	8	14	6	1	1	.....	.....	.....
	Females	35	20	3	10	1	1	.....	.....	.....	.....
Kent	Total	2,551	1,049	1,074	285	149	1	.....	4	7	32
	Males	1,320	536	556	126	80	1	.....	3	3	15
	Females	1,222	507	518	109	67	.....	.....	.....	4	17
	Unknown	9	6	.....	.....	2	.....	.....	1	.....	.....
Keweenaw	Total	117	7	90	19	.....	.....	1	.....	.....	.....
	Males	60	3	51	6	.....	.....	.....	.....	.....	.....
	Females	57	4	39	13	.....	.....	1	.....	.....	.....
Lake	Total	94	45	27	13	6	.....	.....	1	1	1
	Males	33	15	9	6	2	.....	.....	.....	1	.....
	Females	61	30	18	7	4	.....	.....	1	.....	1
Lapeer	Total	377	185	73	66	35	10	2	.....	.....	6
	Males	198	87	40	42	19	6	.....	.....	.....	4
	Females	179	98	33	24	16	4	2	.....	.....	2
Leelanau	Total	194	79	67	32	15	.....	.....	1	.....	.....
	Males	102	37	40	17	8	.....	.....	.....	.....	.....
	Females	92	42	27	15	7	.....	.....	1	.....	.....
Lenawee	Total	583	433	86	34	22	1	.....	5	.....	22
	Males	298	221	42	15	8	1	.....	2	.....	11
	Females	285	212	24	19	16	.....	.....	3	.....	11
Livingston	Total	250	200	17	16	13	3	.....	1	.....	.....
	Males	110	81	10	9	9	.....	.....	1	.....	.....
	Females	140	119	7	7	4	3	.....	.....	.....	.....

Table 21.—CONTINUED.—*Births by counties, parent-nativity and sex.*

Counties.	Sex.	Children born, 1892.	Nativity of parents of children born in 1892.								
			Both native-born.	Both foreign-born.	Foreign father and native mother.	Foreign mother and native father.	Mother unknown.		Father unknown.		Both unknown.
							Father.		Mother.		
							Native.	Foreign.	Native.	Foreign.	
Luce	Total	40	4	26	2	7	.....	.....	.....	.....	1
	Males	20	3	13	1	3	.....	.....	.....	.....	.....
	Females	20	1	13	1	4	.....	.....	.....	.....	1
Mackinac	Total	125	45	43	14	3	7	4	2	.....	7
	Males	74	30	22	6	1	6	4	2	.....	3
	Females	51	15	21	8	2	1	.....	.....	.....	4
Macomb	Total	592	329	127	78	54	.....	.....	2	1	1
	Males	326	186	70	36	32	.....	.....	1	1	.....
	Females	266	143	57	42	22	.....	.....	1	.....	1
Manistee	Total	732	120	496	68	32	2	6	2	.....	6
	Males	389	60	264	41	14	2	4	1	.....	3
	Females	342	59	232	27	18	.....	2	1	.....	3
	Unknown	1	1	.....	.....	.....	.....	.....	.....	.....	.....
Manitou	Total	7	3	3	1	.....	.....	.....	.....	.....	.....
	Males	5	1	3	1	.....	.....	.....	.....	.....	.....
	Females	2	2	.....	.....	.....	.....	.....	.....	.....	.....
Marquette	Total	1,526	165	1,152	148	49	.....	1	3	4	4
	Males	815	83	616	83	27	.....	1	2	2	1
	Females	711	82	536	65	22	.....	.....	1	2	3
Mason	Total	454	162	196	58	29	4	.....	3	.....	2
	Males	261	90	114	32	21	2	.....	1	.....	1
	Females	193	72	82	26	8	2	.....	2	.....	1
Mecosta	Total	357	190	95	41	26	.....	1	2	.....	2
	Males	187	106	42	23	13	.....	.....	1	.....	2
	Females	170	84	53	18	13	.....	1	1	.....	.....
Menominee	Total	657	126	386	89	39	3	3	3	.....	8
	Males	350	61	206	46	25	3	3	1	.....	5
	Females	306	65	180	43	14	.....	.....	1	.....	3
	Unknown	1	.....	.....	.....	.....	.....	.....	1	.....	.....
Midland	Total	205	103	57	24	21	.....	.....	.....	.....	.....
	Males	100	47	31	11	11	.....	.....	.....	.....	.....
	Females	105	56	26	13	10	.....	.....	.....	.....	.....

Table 21.—CONTINUED.—*Births by counties, parent-nativity, and sex.*

Counties.	Sex.	Children born, 1892.	Nativity of parents of children born in 1892.								
			Both native-born.	Both foreign-born.	Foreign father and native mother.	Foreign mother and native father.	Mother unknown.		Father unknown.		Both unknown.
							Father.		Mother.		
							Native.	Foreign.	Native.	Foreign.	
Missaukee	Total	164	54	71	28	10	2	1	1	.....	2
	Males	76	21	33	11	7	1	.....	1	.....	2
	Females	88	33	38	12	3	1	1	.....	.....	.....
Monroe	Total	609	494	34	52	19	5	2	3	.....	.....
	Males	302	252	12	22	11	2	2	1	.....	.....
	Females	306	242	22	30	8	3	.....	1	.....	.....
	Unknown	1	.....	.....	.....	.....	.....	.....	1	.....	.....
Montcalm	Total	539	324	110	47	44	.....	1	2	.....	11
	Males	268	158	56	24	23	.....	.....	.....	.....	7
	Females	271	166	54	23	21	.....	1	2	.....	4
Montmorency	Total	31	7	16	7	1	.....	.....	.....	.....	.....
	Males	23	6	9	7	1	.....	.....	.....	.....	.....
	Females	8	1	7	.....	.....	.....	.....	.....	.....	.....
Muskegon	Total	1,023	308	555	77	64	1	.....	7	2	9
	Males	535	165	283	40	37	.....	.....	4	1	5
	Females	481	141	267	37	27	1	.....	3	1	4
	Unknown	7	2	5	.....	.....	.....	.....	.....	.....	.....
Newaygo	Total	313	173	68	40	21	3	1	6	.....	1
	Males	164	90	36	23	8	2	1	3	.....	1
	Females	149	83	32	17	13	1	.....	3	.....	.....
Oakland	Total	512	328	59	57	37	14	8	1	4	4
	Males	290	187	36	23	26	6	7	1	2	2
	Females	222	141	23	34	11	8	1	.....	2	2
Oceana	Total	301	195	50	27	22	.....	.....	5	.....	2
	Males	156	106	22	13	11	.....	.....	3	.....	1
	Females	145	89	28	14	11	.....	.....	2	.....	1
Ogemaw	Total	108	38	42	16	10	.....	.....	.....	1	1
	Males	64	23	27	6	8	.....	.....	.....	.....	.....
	Females	44	15	15	10	2	.....	.....	.....	1	1
Ontonagon	Total	68	27	28	9	4	.....	.....	.....	.....	.....
	Males	33	16	12	5	.....	.....	.....	.....	.....	.....
	Females	35	11	16	4	4	.....	.....	.....	.....	.....

increased. Attention was called to the "probability, if the present rate of change continues, of the latter being in excess in another year for the first time in the history of the State registration." This prediction has been so far justified, that the percentages of native-born and foreign-born parents of children are found to be the same (39.7 per cent) for the year. It is not probable that this change will progress in the same manner during 1893, nor, perhaps, for some years, as the closing of the mines during the winter of 1893–94 and the financial distress prevailing in the Upper Peninsula in consequence thereof, have greatly diminished the number of marriages from that portion of the State, which has been accustomed to furnish the largest number of marriages of foreign-born persons, together with a high birth-rate for children of foreign-born parents based thereon.

Table 18 exhibits certain facts, with detail of sex, in relation to the number and proportion of births of each parent-nativity for the year 1892. As has been already stated, the percentages of children born of parents both of whom are native-born or both foreign-born, are exactly equal for this year, being 39.7 per cent of the total births. There is still a slightly larger proportion of children born having at least one parent native-born (58.2 per cent) than there is of those with one or both parents foreign-born (57.5 per cent), but a similar diminution in the former and increase in the latter may be noted in comparing a series of years.

Table 18.—*Showing, by sex, the parent-nativity of children born in Michigan during the year 1892, according to the returns.*

Nativity of parents of children born, 1892.	Total births, 1892.							
	Number.				Per cent of total.			
	Totals.	Males.	Females.	Unknown.	Totals.	Males.	Females.	Unknown.
All nativities	46,221	24,148	21,995	78	100.0	100.0	100.0	100.0
Both parents native-born	18,368	9,569	8,766	33	39.7	39.6	39.9	42.3
Both parents foreign-born	18,344	9,605	8,723	16	39.7	39.8	39.7	20.5
Foreign father and native mother	5,061	2,647	2,408	6	10.9	11.0	10.9	7.7
Foreign mother and native father	2,922	1,559	1,360	3	6.3	6.5	6.2	3.8
Unknown mother, father native	277	141	135	1	.6	.6	.6	1.3
Unknown mother, father foreign	174	101	71	2	.4	.4	.3	2.6
Unknown father, mother native	270	129	137	4	.6	.5	.6	5.1
Unknown father, mother foreign	96	46	50	.....	.3	.2	.2	.....
Both unknown	709	351	345	13	1.7	1.5	1.6	16.7
One or both native*	26,898	14,045	12,906	47	58.2	58.2	58.2	60.3
One or both foreign*	26,597	13,958	12,612	27	57.5	57.8	57.3	34.6

* Including cases where nativity of either parent is unknown.

One other feature appears in this table, although the evidence is not very decisive, namely, the larger proportion of male children born to parents of foreign birth, and the larger proportion of females born to native couples, comparison being made in each case with the percentage of total births, by sex, to each nativity. This relation appears to hold true in examining previous years.

These changes are also shown in Table 19, the year 1892 being compared with 1890 and 1891, and also with the average for the previous ten years, 1882-91. The percentage of native-born fathers is diminishing, as is also that of the native-born mothers, but the latter is still in excess of the percentage of foreign-born mothers. The rise in the proportion of foreign-born fathers continues for the years 1891 and 1892.

Table 19.—*Parent-nativity of children born in Michigan for each of the years 1890–92, and the average for ten years, 1882–91.*

Nativity of parents of children born.		1890.		1891.		1892.		Average for 10 years, 1882–91.	
		Number.	Per cent of total.	Number.	Per cent of total.	Number.	Per cent of total.	Number.	Per cent of total.
All nativities		52,806	100.0	50,812	100.0	46,221	100.0	44,908	100.0
Both native-born		21,866	41.8	20,425	40.2	18,368	39.7	19,109	42.6
Both foreign-born		20,076	38.4	20,272	39.8	18,344	39.7	16,789	37.4
Foreign father and native mother		5,643	10.8	5,428	10.8	5,061	10.9	4,941	11.0
Foreign mother and native father		3,157	6.0	3,119	6.1	2,922	6.3	2,784	6.2
One or both unknown		1,564	3.0	1,568	3.1	1,526	3.3	1,280	2.9
One or both parents native*		30,666	58.4	28,972	57.0	26,351	57.0	26,834	59.8
One or both parents foreign*		23,876	55.2	23,819	56.8	26,327	57.0	23,201	51.7
Father	Native	25,269	48.3	23,837	46.9	21,567	46.7	22,060	49.1
	Foreign	25,909	49.5	25,942	51.0	23,579	51.0	21,837	48.6
	Unknown	1,128	2.2	1,063	2.1	1,075	2.3	1,006	2.2
Mother	Native	27,756	53.1	26,048	51.3	23,699	51.3	24,246	54.0
	Foreign	23,331	44.6	23,483	46.2	21,362	46.2	19,660	43.8
	Unknown	1,219	2.3	1,281	2.5	1,160	2.5	997	2.2

* Excluding cases where nativity of either parent is unknown.

In Table 20 these changes are studied for a longer period of time by means of quinquennial averages, with which the ratios of the individual years 1891 and 1892 are compared. This table should be compared with the similarly constituted one under the subject of marriages, where analogous changes may be seen to have taken place,

Table 22.—*Number of pairs of twins, illegitimate children and still-births born in Michigan during the year 1892, by counties.*

State and counties.	Number of pairs of twins born in 1892.*	Number of illegitimate children born in 1892.†	Number of still-births in 1892.	Counties.	Number of pairs of twins born in 1892.	Number of illegitimate children born in 1892.	Number of still-births in 1892.
State	557	405	1,014	Iosco	3	1	8
				Iron	4	1	6
Alcona	2	5	3	Isabella	3	3	5
Allegan	5	5	18	Jackson	12	1	14
Alpena	6	2	2	Kalamazoo	11	2	9
Antrim	5	1	4	Kalkaska	2		
Arenac	2		4	Kent	24	24	92
Baraga	2	1		Keweenaw		1	1
Barry	6	1	7	Lake		1	2
Bay	17	3	45	Lapeer	4		7
Benzie	2		2	Leelanaw	6		3
Berrien	8	4	20	Lenawee	8	5	5
Branch	1	1	2	Livingston	1	1	3
Calhoun	17	2	28	Mackinac	3	3	1
Cass	2	4	4	Macomb	5	3	7
Charlevoix		4	4	Manistee	13	1	21
Cheboygan	3	1	6	Marquette	19	7	51
Chippewa	3	3	4	Mason	7		10
Clare	1		2	Mecosta	4		9
Clinton	6		6	Menominee	8		10
Crawford	1	1		Midland	1	1	3
Delta	2	1	2	Missaukee		1	4
Dickinson	11		10	Monroe	8	5	10
Eaton	4	3	5	Montcalm	6	2	13
Emmet	3	4	1	Muskegon	15	3	28
Genesee	6	2	17	Newaygo	5		5
Gogebic	6	6	15	Oakland	8	2	13
Grand Traverse	1	2	5	Oceana	5	3	3
Gratiot	4	4	9	Ontonagon			1
Hillsdale	4	2	8	Osceola	7	4	2
Houghton	26	4	17	Oscoda			1
Huron	9	4	13	Otsego			1
Ingham	4	1	16	Ottawa	13	3	18
Ionia	4	1	8	Saginaw	23	27	83

* Includes 35 males, 18 females and 2 of unknown sex still-born.
† Includes 8 males, 7 females and 1 unknown sex, still-born.

Table 22.—CONCLUDED.—*Twins, illegitimates and still-births by counties.*

Counties.	Number of pairs of twins born in 1892.	Number of illegitimate children born in 1892.	Number of still-births in 1892.	Counties.	Number of pairs of twins born in 1892.	Number of illegitimate children born in 1892.	Number of still-births in 1892.
Sanilac	15	3	16	Tuscola	7	2	11
Schoolcraft	5	...	5	Van Buren	2	6	25
Shiawassee	4	2	6	Washtenaw	3	...	2
St. Clair	12	6	20	Wayne	99	205	165
St. Joseph	4	3	19	Wexford	5	1	4

Still-births are returned as deaths as well as in births, and in practice it is found that a careful comparison of the two sets of returns is necessary in order that none may be omitted or twice counted. Still-births are defined, for registration purposes, in the instructions issued to the enumerators (supervisors), as cases in which the children were *born dead*, not having lived an appreciable time, hours or days, after birth. It was observed in the examination of the returns that frequently cases would be reported as "still-born" in which the child was also reported to have lived a day or more. For such cases the enumerators are directed to report another cause of death, and the term "unknown" is substituted for "still-born" if no other cause can be ascertained.

There appears to be much difference in statistical practice in the matter of the registration of still-births in different States, and the fact that in some registration returns they are included, while they are entirely omitted in others, should always be borne in mind in making comparisons of the figures representing the total mortality of different States according to their several registration reports. Thus the death-rates as stated in the reports of Michigan, Minnesota, Ontario, Ohio, as well as those of the United States census mortality reports, include the number of still-births in the number of deaths; the death-rates of the reports of Massachusetts (except in certain tables), Connecticut (since 1886), Rhode Island, New Jersey and others do not do so, and consequently should be increased somewhat for comparison with the former—if the great difference in accuracy of registration admitted of any close comparison, between the returns of the States in these two groups, as it does not do at present.

In practice it would seem that the still-births should always be carefully enumerated and the aggregate number stated in connection with the total number of deaths, but their statistical relations otherwise should be confined to their consideration as births. If they be allowed to enter the tables relating to deaths, by ages, they should be kept entirely distinct from the actual deaths, by disease, of live-born children, the number of deaths of children under one month of age being stated exclusive of still-births.

The numbers of pairs of twins, illegitimate births and still-born children occurring in each county of the State, are shown in Table 22. As usual the county of Wayne, which includes Detroit, has a preponderance of illegitimate births, over one-half of the total number being found there. It is not unlikely, however, that this number is unduly increased by children born of mothers resident in other towns, who have sought Detroit for the purpose of concealing the fact of illegitimate parentage.

The ratios of still-born, twin and illegitimate children to the total births of the State are given in Table 23 for four years, 1889-92, and are also compared with the averages of the ten-year period, 1882-91. Still-births and twins are about the same in numbers for each of these years, being about 2.5 per cent of total births. There are about one-third as many illegitimates, .8 to .9 per cent. The last registration report of our neighbor, the Province of Ontario, for the year 1891, shows that 637 illegitimate births were registered during the year, and that, consequently, the population of this State and the Province being almost identical, the illegitimate birth-rate is about one-half larger in Ontario than in Michigan. In regard to this rate the report referred to remarks: "Assuming an approach to correctness in the figures, the ratio of 14.3 per 1,000 births (1.4 per cent), is an exceedingly low one, the ratio in England for 1891 being 42 per 1,000 births (4.2 per cent). This rate is the lowest yet recorded in England. Making the greatest allowance for any defective registrations, the high moral status of the people of Ontario is admirably illustrated by the table."

Without desiring to make any invidious comparisons between the statistics quoted and those of this State, it may be inferred that the moral condition of Michigan, so far as the collected data of illegitimacy are an index thereof, is in a satisfactory state. In Massachusetts the percentage of illegitimates to total births was 1.5 for the year 1892; Rhode Island recorded 1.0 per cent for 1892; Indiana, 1.6 per cent for 1892.

Table 23.—*The relation of still-born, twin and illegitimate children to total births returned, for the years 1889-92, and the average for ten years, 1882-91.*

Still-born, twin and illegitimate children.	Years.				
	1889.	1890.	1891.	1892.	Av. for 10 years, 1882-91.
All children born	49 272	52,806	50,812	46,221	44,903
Still-births	1,202	1,397	1,090	1,014	1,046
Per cent of still-births to total births	2.4	2.5	2.1	2.2	2.3
Twins	1,054	1,542	1,354	1,114	1,063
Per cent of twins to total births	2.1	2.9	2.7	2.4	2.4
Illegitimates	421	455	389	405	412
Per cent of illegitimates to total births	.8	.9	.8	.9	.9

Table 24 exhibits the facts in regard to plural births for a period of ten years, and also states the ratios that twins and triplets sustain in each of these years to total births. For 1892, the ratio of twins is slightly greater than the average (1 to 84), a pair of twins being reported for every 83 births. The two years immediately preceding, however, far exceed it in this respect. The facts in regard to births of triplets in 1892 are stated in a note to this table. Sex and parent-nativity are equally divided in triplet births for this year.

Table 24.—*Exhibiting the number of pairs of twins and cases of triplets returned in Michigan for the ten years 1883–92, and the average for each of these years.*

Years.	Pairs of twins.	Cases of triplets.	No. of births to one pair of twins.	No. of births to one case of triplets.
1883	466	9	88	4,584
1884	450	4	90	10,102
1885	481	7	88	6,017
1886	501	6	82	6,849
1887	528	5	88	9,245
1888	582	8	84	6,119
1889	527	6	93	8,212
1890	771	6	68	8,718
1891	677	7	75	7,259
1892	557	6	83	7,704
Average, 10 years, 1883-92	554	6	84	7,476

TRIPLETS.—There were six cases of triplets recorded for 1892, as follows: Huron county, 2 males, 1 female, foreign parents, born in June; Kent county, 2 males, 1 female, parents native, born in April; Sanilac county, 1 male, 2 females, foreign mother and native father, born in April; St. Clair county, 2 females, foreign father and native mother, born in April; Wayne county, 3 males, native parents, born in December, and 1 male, 2 females, foreign parents, born in March. All were white, and it will be observed that the parent-nativity was equally divided.

Table 25.—*Exhibiting, by sex and months the number of still-born, twin and illegitimate children returned in Michigan for the year 1892.*

Condition.	Sex.	Year, 1892.	Months of birth, 1892.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
Still-births	Total	1,014	82	74	91	85	83	85	82	95	72	72	79	113	1
	Males	597	43	42	52	55	46	48	52	62	44	46	44	63	....
	Females	374	36	30	36	27	35	32	28	29	23	24	28	46	....
	Unknown	43	3	2	3	3	2	5	2	4	5	2	7	4	1
Twins*	Total	1,114	88	94	74	70	122	110	100	66	94	98	92	106	....
	Males	553	40	56	35	36	70	50	43	40	37	52	42	52	....
	Females	559	48	38	39	34	52	58	57	26	57	46	50	54	....
	Unknown	2	....	....	....	....	....	2	....	....	....	....	....	....	....
Illegitimates	Total	405	31	27	38	49	42	39	41	23	35	28	31	21	....
	Males	191	14	16	19	31	18	13	19	8	16	15	14	8	....
	Females	206	17	11	18	16	24	25	19	15	18	13	17	13	....
	Unknown	8	....	....	1	2	....	1	3	....	1	....	....	....	....

* The total number of twin children, i. e., twice the number of pairs of twins. Triplets are not included.

The months of birth of still-births, twin children and illegitimates may be readily compared in Table 25. This table is affected, probably in the same proportion as the total number of births, by omissions in the early months of the year due to the greater lapse of time before registration, but the relative numbers of births of each class in any month may probably be taken as correctly represented.

In Table 26 the parent-nativities of still-born, twin and illegitimate children are compared for the year 1892, sex being specified in each case. Without attempting to refer to the children born of parents of different or unknown nativities, it may be said that foreign-born parents show a slight excess in the proportion of still-born children, and rather a marked excess in the proportion of twins. Native-born parents, on the contrary, are in the majority as regards illegitimate parentage. This probably does not arise from any greater tendency to immorality on the part of the native white populaton of the State, but simply from the fact that under the term "native" are included the black, mulatto and Indian inhabitants, for all of which classes the illegitimate birth-rate is high.

Table 26.—*Parent-nativity of still-born, twin and illegitimate children returned in Michigan for the year 1892.*

Nativity of parents.	Number of still-born children, 1892.				Number of pairs of twins, 1892.					Number of illegitimate children, 1892.			
	Total.	Males.	Females.	Unknown.	Total.	Males.	Females.	One of each.	Unknown.	Total.	Males.	Females.	Unknown.
All nativities	1,014	597	374	43	557	158	160	238	1	405	191	206	8
Both native-born	330	205	112	13	206	60	54	92	....	52	24	25	3
Both foreign-born	346	204	128	14	233	67	70	95	1	25	11	14	....
Foreign father and native mother	109	59	46	4	67	13	21	33	....	14	7	5	2
Foreign mother and native father	56	31	24	1	36	11	11	14	....	3	2	1	....
Unknown mother, father native	8	1	7	....	2	1	1	....	....	3	2	1	....
Unknown mother, father foreign	1	1	....	....	3	1	1	1	....	1	1	....	....
Unknown father, mother native	9	5	2	2	4	2	1	1	....	97	46	48	3
Unknown father, mother foreign	4	1	3	....	1	....	....	1	....	43	21	22	....
Both unknown	151	90	52	9	5	3	1	1	....	167	77	90	....
One or both native	512	301	191	20	315	87	88	140	....	169	81	80	8
One or both foreign	516	296	201	19	340	92	103	144	1	86	42	42	2

In Table 27 it is shown that about 108 males are born alive for every 100 females; this is the result of the experience of ten years. For 1892 the ratio was 109 to 100. The proportion of males in twin and illegitimate births is smaller, females being in excess among illegitimates. Still-births, on the contrary, show a great excess of males, in explanation of which the added dangers during delivery incident to the larger e of the head in male infants may be referred to.

Table 27.—*Exhibiting the proportion of males to females among children born alive, still-births, twins and illegitimates.*

Condition.	1891.				1892.				Average for 10 years, 1882-1891.			
	Males.	Females.	Unknown.	Males to 100 females.	Males.	Females.	Unknown.	Males to 100 females.	Males.	Females.	Unknown.	Males to 100 females.
Born alive	25,856	23,812	54	109	23,551	21,621	35	109	22,752	21,074	31	108
Still-births	583	434	73	134	597	374	43	160	594	411	41	145
Twins*	637	711	6	90	553	559	2	99	544	537	2	101
Illegitimates	174	204	11	85	191	206	8	93	176	184	3	96

* Twin children, i. e., twice the number of pairs of twins born; triplets not included.

The relations of parent-nativity to plural births may be examined for ten years past in Table 28. Parents both of foreign birth are the most numerous, although the ratio of this class for 1892 is below the ten-year average. A marked feature of that year is the great rise in the percentage of twins born of parents of different nativities.

Table 28.—*Exhibiting the parent-nativity of plural births in Michigan for the ten years 1883-92, inclusive.*

Years.	Total.	Native-born.		Foreign-born.		Mixed.		Unknown.	
		Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
1883	959	417	43.5	364	38.0	150	15.6	28	2.9
1884	912	360	39.5	396	43.4	144	15.8	12	1.3
1885	988	384	39.1	414	42.1	155	15.8	30	3.1
1886	1,020	419	41.1	407	40.0	176	17.3	18	1.8
1887	1,071	448	41.8	423	39.5	168	15.7	32	3.0
1888	1,194	485	40.6	530	44.4	159	13 3	20	1.7
1889	1,072	410	38.3	486	45.3	172	16.0	4	.4
1890	1,561	437	28.0	904	57.9	214	13.7	6	.4
1891	1,375	434	31.6	746	54.3	183	13.3	12	.9
1892	1,132	418	36.9	472	41.7	232	20.5	10	.9
Average, 1883-92	1,128	421	37.3	514	45.6	175	15.5	17	1.5

In a similar manner the percentage relations of the mothers of illegitimate children are studied as regards nativity in Table 29. Here the positions of the native-born and foreign-born parents are reversed, the native-born being largely in excess. This comes, as has already been explained, in great part from the inclusion of the colored population among the "natives." In this table the ratios of illegitimate births to total births may also be examined for the ten-year period. This is quite variable as there is probably much variation in the accuracy of enumeration in different years. That for 1892, 8.8 per 1,000 births, slightly exceeds the average, 8.2 per 1,000 births.

Table 29.—*Exhibiting the number of illegitimate children born in Michigan in the years 1883–92, inclusive; also the rate of illegitimate births per 1,000 births, and the parent-nativity of the mothers of illegitimates.*

Years.	Illegitimate children.		Mothers of illegitimate children.							
			Total.	Native.		Foreign.		Unknown.		
	Number.	To every 1,000 births.		Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
1883	311	7.6	311	137	44.1	86	27.7	88	28.3
1884	193	4.8	193	108	53.4	69	35.8	21	10.9
1885	248	5.9	248	115	46.4	86	34.7	47	18.9
1886	300	7.3	300	142	47.3	45	15.0	113	36.7
1887	422	9.1	423	151	35.8	72	17.1	199	47.2
1888	591	12.1	591	149	25.2	72	12.2	370	62.6
1889	421	8.5	419	126	30.1	73	17.4	220	52.5
1890	455	8.7	450	148	32.9	73	16.2	229	50.9
1891	389	7.7	386	143	37.1	66	17.1	177	45.8
1892	405	8.8	405	163	40.2	71	17.5	171	42.2
Av'age, 1883-92	374	8.2	373	138	37.0	71	19.0	164	44.0

Table 30.—*By nativity and color, the number and proportion (to total mothers) of mothers having still-births for the years 1890–92, and the average for ten years, 1882–91.*

Nativity and color of mothers.	1890.			1891.			1892.			Average for 10 years, 1882-91.		
	Mothers having still-births.	Whole number of mothers, including those of still-births.	Per cent of mothers of still-births to all mothers.	Mothers having still-births.	Whole number of mothers, including those of still-births.	Per cent of mothers of still-births to all mothers.	Mothers having still-births.	Whole number of mothers, including those of still-births.	Per cent of mothers of still-births to all mothers.	Mothers having still-births.	Whole number of mothers, including those of still-births.	Per cent of mothers of still-births to all mothers.
All colors and nativities	1,279	51,517	2.5	1,036	50,121	2.1	997	45,652	2.2	1,007	44,346	2.3
Native born	507	27,469	1.9	450	25,771	1.4	442	23,416	1.9	442	23,962	1.8
Foreign born	542	22,834	2.4	420	23,076	1.8	395	21,086	1.9	408	19,366	2.1
Unknown	230	1,214	19.0	166	1,274	13.0	160	1,150	13.9	157	1,018	15.4
White	1,220	50,992	2.4	1,006	49,799	2.0	995	45,370	2.2	979	43,935	2.2
Black	53	324	16.4	14	178	8.1	.....	91	.....	15	178	8.4
Mulatto	.....	79	.....	1	34	2.9	.....	41	.....	3	88	3.4
Indian	.....	107	.....	1	87	1.1	.....	114	.....	2	115	1.7
Unknown	6	15	40.0	14	28	50.0	2	36	5.6	9	31	29.0
Black and mulatto	53	403	13.2	15	207	7.2	.....	132	.....	18	265	6.8

Table 31.—*By nativity and color, the number and proportion (to total mothers) of mothers of twin births returned for the years 1890–92, and the average for ten years, 1882–91.*

Nativity and color of mothers of twins.	1890.			1891.			1892.			Average for 10 years, 1882–91.		
	Number of pairs of twins.	Whole number of mothers, including those of twins.	Per cent of births of twins to all mothers.	Number of pairs of twins.	Whole number of mothers, including those of twins.	Per cent of births of twins to all mothers.	Number of pairs of twins.	Whole number of mothers, including those of twins.	Per cent of births of twins to all mothers.	Number of pairs of twins.	Whole number of mothers, including those of twins.	Per cent of births of twins to all mothers.
All colors and nativities	771	51,517	1.5	677	50,121	1.4	557	45,652	1.2	541	44,348	1.2
Native-born	278	27,469	1.0	271	25,771	1.1	277	23,416	1.2	256	23,983	1.1
Foreign-born	488	22,834	2.1	399	23,076	1.7	270	21,086	1.3	277	19,376	1.4
Unknown	5	1,214	.4	7	1,274	.5	10	1,150	.9	9	988	.9
White	750	50,992	1.5	673	49,799	1.4	548	45,370	1.2	532	43,986	1.2
Black	18	324	5.6	2	173	1.2	3	91	3.3	5	178	2.8
Mulatto	1	79	1.3	1	34	2.9	.....	41	.....	2	88	2.3
Indian	1	107	.9	1	87	1.1	5	114	4.4	2	115	1.7
Unknown	1	15	6.7	.....	28	.....	1	36	2.8	.....	31	.6
Black and mulatto	19	403	4.7	3	207	1.4	3	132	2.3	7	265	2.6

Tables 30, 31 and 32 present, for still-births, twins and illegitimates respectively, the ratio of the number of mothers of each class to the total number of mothers, grouping being made according to nativity and color or race. With respect to the latter items, the showing for any individual year can be given little weight, since from the small numbers involved, the rates are subject to quite irregular variations. Some general idea may be gained, however, from the study of these tables for a series of years, or from comparison of the ten year averages, of the actual relations involved.

Thus, for still-births it would appear that a larger proportion of such children is born to mothers of foreign birth than to native-born mothers, and also that black and mulatto women bear more than white women in proportion to the total number of births; the reverse is the case as regards Indian and white women.

As to twins, the ratio is distinctly in favor of mothers of foreign birth, and black, mulatto and Indian mothers all exceed the white mothers in this respect.

Illegitimate births show a slight excess of native-born mothers, but a very marked excess of Indian, black and mulatto mothers as compared to the number of white mothers.

Great care must be exercised in making use of the data presented in these tables, and due consideration be given to the relative numbers of the returns for each class on which the ratios are based, as otherwise most erroneous conclusions may be drawn. Especially as regards the colored races, the general unreliability of statistics based on the very small numbers found in the annual returns should be taken into consideration.

Table 32.—*By nativity and color, the number and proportion (to total mothers) of mothers of illegitimates returned for the years 1890–92, and the average for ten years, 1882–91.*

Nativity and color of mothers of illegitimates.	1890.			1891.			1892.			Average for 10 years, 1882-91.		
	Mothers having illegitimates.	Whole number of mothers, including those of illegitimates.	Per cent of mothers of illegitimates to all mothers.	Mothers having illegitimates.	Whole number of mothers, including those of illegitimates.	Per cent of mothers of illegitimates to all mothers.	Mothers having illegitimates.	Whole number of mothers, including those of illegitimates.	Per cent of mothers of illegitimates to all mothers.	Mothers having illegitimates.	Whole number of mothers, including those of illegitimates.	Per cent of mothers of illegitimates to all mothers.
All colors and nativities	450	51,517	.9	386	50,121	.8	405	45,652	.9	360	44,349	.8
Native-born	145	27,469	.5	143	25,771	.6	163	23,416	.7	135	23,984	.6
Foreign-born	76	22,834	.3	66	23,076	.3	71	21,086	.3	72	19,377	.4
Unknown	229	1,214	18.9	177	1,274	13.9	171	1,150	14.9	154	988	15.6
White	417	50,592	.8	358	49,799	.7	386	45,370	.9	333	43,937	.8
Black	17	324	5.3	13	173	7.5	6	91	6.6	9	178	5.1
Mulatto	3	79	3.8	1	34	2.9	1	41	2.4	3	88	3.4
Indian	8	107	7.5	11	87	12.6	10	114	8.8	7	115	6.1
Unknown	5	15	33.3	3	28	10.7	2	36	5.6	9	32	28.1
Black and mulatto	20	403	5.0	14	207	6.8	7	132	5.3	12	265	4.5

Table 33.—*List of townships in which it was reported that no births occurred in 1892, showing population in 1890.*

County.	Township.	Population, 1890.	County.	Township.	Population, 1890.
Alpena	Sanborn	204	Marquette	Turin	100
Arenac	Moffat	240		Sands*	
Chippewa	Trout Lake	112	Mason	Hamlin	85
	White Fish	251	Missaukee	West Branch	230
Delta	Fairbanks	740	Newaygo	Monroe	1,066
Emmet	Carp Lake	236	Ontonagon	Carp Lake	18
Houghton	Laird	159		Greenland	272
Kalkaska	Glade	183	Roscommon	Gerrish	66
Lake	Lake	59		Markey	28
Luce	Pentland	347		Richfield	76
Total population reporting "no births"					4,472

* Not formed at time of census, 1890.

Table 33 exhibits the list of townships in which it was reported by the supervisors that no births occurred in 1892. The aggregate population here represented is 4,472 according to the census of 1890. This is somewhat larger than the number reported for last year, 3,313. It is very probable in some cases, as in Fairbanks township, Delta county, and Monroe township, Newaygo county, that births did occur but were not registered by the enumerators, or, possibly, not transmitted by the county clerks. The population in each of these cases is so large as to render it very unlikely that there were actually no births during the entire year.

Table 34.—*List of townships from which no returns of births were received for 1892, showing population in 1890.*

County.	Township.	Population, 1890.	County.	Township.	Population, 1890.
Arenac	Turner	48	Livingston	Marion ‡	1,146
Baraga	Arvon	209		Putnam	1,242
Benzie	Weldon	97	Manitou	South Manitou	74
Cheboygan	Forest	161	Ogemaw	Foster	167
Clare	Franklin †	545		Logan	59
	Hamilton	508	Ontonagon	Bohemia	92
Crawford	Blaine	51		Ontonagon	1,564
	Frederic	260	Sanilac	Forester †	938
	South Branch	106		Moore	883
Gladwin	Buckeye †	581	Schoolcraft	Germfask †	148
	Bentley*			Inwood* †	
Grand Traverse	Acme*			Thompson	931
Iosco	Burleigh	448	Shiawassee	Bennington	1,298
	Wilber	299			
Total population of delinquent townships					11,845

* Not formed at time of census, 1890.
† Returns received too late for compilation in this report.
‡ No enumeration on account of death of supervisor.

The list of delinquent townships given in Table 34, having an aggregate population of 11,845, shows a marked improvement over last year when the population so delinquent amounted to 23,151. This is due partly to the fact that letters asking for corrections and for the returns of delinquent townships were not sent out immediately upon the receipt of the returns in September, 1892, as customary, but the compiler was compelled to delay during the actual process of compilation in 1893 for the purpose of repairing such deficiencies. This, from the lapse of time, was more than usually difficult to do, and the result was that a larger proportion of deficient and delinquent returns appeared for the year 1891 than for any year preceding.

Out of the 27 townships having a total population of 11,845 persons in 1890, which were delinquent in 1892, there were five that finally made a return, though too late for the present report. This reduces the non-reporting population to 9,638; if the pop-

ulation of Marion township, Livingston county, which made no report on account of the death of the supervisor, be also deducted, there remain only 8,492 persons not represented in the returns from the negligence of the supervisors. These are, in part, inhabitants of some very sparsely settled districts in which it is not unlikely, in some cases, that no births actually occurred during the year.

In some cases during the present year the attention of the prosecuting attorneys of the counties in which certain supervisors had failed to make proper returns, has been called to the delinquencies with very beneficial results. In other cases the difficulty of ascertaining, between the contradictory statements of supervisor and county clerk, where the fault for delinquent returns should be properly placed, has prevented this office from proceeding with as great a degree of promptness as would seem necessary to cause the law to be fully carried out. It is hoped that, if county clerks make early returns as directed by their present instructions, leaving this office to deal with delinquencies of this nature, that a very much more business-like and satisfactory showing can be made in future. Experience has shown that it is folly to expect good results from the class (fortunately few) of negligent, procrastinating supervisors, unless it be clearly understood that the penalties provided by law will be promptly enforced in all cases where its provisions are not complied with.

PART III.—MARRIAGES IN MICHIGAN DURING THE YEAR 1892.

A larger number of marriages was registered for this year, than for any year preceding. The number was 20,107, and includes all of the marriages performed in 1892, of which returns were made up to and including the returns for the first quarter of 1893. The system regulating the registration of marriages may be considered the most satisfactory of that governing the collection of any class of vital statistics in this State. The returns are made quarterly, instead of being the result of an enumeration for the entire year, made some time after its close, as is the case in the registration of births and deaths. The information required must be given by affidavit as a necessary preliminary to the filling out of the license authorizing the solemnization of the marriage, and is, with very few exceptions, fully and correctly obtained. The character of the record itself is one that commends itself to the public feeling which recognizes the necessity of a complete legal record of all marriages far more fully than it does the importance of preserving the facts relating to births or deaths. As a matter of fact, quite as many applications are made to the central registration office for facts regarding the deaths of pensioners and others as inquiries concerning marriage records, but in many cases it is impossible to supply the information needed.

DELAY OR NEGLECT IN MAKING RETURNS OF MARRIAGES.

There is one point, however, affecting the accuracy of the marriage returns which is of considerable importance and calls especially for vigilance on the part of the county clerks. This is the item of neglected returns by clergymen or justices of the peace after the performance of marriage ceremonies. When the license is taken out by the applicant, all the particulars of statistical importance are filled out in a form of affidavit, a copy of which is given on the following page.

Using this affidavit as a basis, the county clerk fills out the marriage license, the form of which is given below, as far as possible. The marriage license consists of two parts, an original and a duplicate, both printed on the same sheet and in exactly the same form, except that the directions for use printed at the bottom of the sheet differ. The original is directed "*to be returned to the county clerk who issued the same within ten days after the marriage;*" the duplicate is "*to be retained by the person solemnizing the marriage,*" who, presumably, after making reference to it for the purpose of filling up the certificate of marriage (privately provided) which is delivered to the persons married, may either preserve or destroy it at his pleasure. In many cases the "Certificate of Marriage" on the duplicate is detached and handed to the persons married as their certificate.

Form of affidavit for license to marry.

No.....189....

AFFIDAVIT FOR LICENSE TO MARRY.

STATE OF MICHIGAN, }
County of ..... } *ss.*

GROOM. FULL NAME OF GROOM.	BRIDE. FULL NAME OF BRIDE.
.....	.....
Age at last birthday.....years.	Age at last birthday .....years.
White, Black, Mulatto, Indian, etc....	White, Black, Mulatto, Indian, etc.....
Residence	Residence .....
Birthplace	Birthplace .....
Occupation	Occupation .....
Father's name	Father's name .....
Mother's maiden name	Mother's maiden name .....
Number of times previously married..	Number of times previously married...
	Maiden name, if a widow.....

.....being duly sworn deposes and says (or affirms) that according to the best of h.... knowledge and belief the information above given is correct, that ..... is acquainted with the provisions of the laws of Michigan relating to marriage, as printed on the back of this affidavit, and that no legal impediment exists why.....and .....may not be married under the laws of Michigan.

.....

Sworn and subscribed to before me, a ....in and for .....County, Michigan, this.....day of. .....189..

.....

.....

NOTE.—The official should ascertain that affiant understands the full nature of this obligation, reading or having read the extracts printed on the back hereof.

The foregoing particulars, with the accompanying forms of blanks, are given for the purpose of showing the simplicity and effectiveness of the system if properly carried out. The larger part of the clerical work is done by the county clerks who receive ample compensation therefor (fifty cents for the issue of each license), and who, as a rule, furnish excellent returns. The clergyman or justice of the peace has only to fill up the blanks under "Certificate of Marriage" in the original and duplicate return, and transmit the original to the county clerk within ten days after the performance of the ceremony. This seems to involve a trifling amount of labor, and in view of the fact that the officiating clergymen often receive a handsome compensation for their services, an integral part of which, under the law of Michigan, is the proper placing of the marriage upon record, it would be supposed that there would be little delinquency in this respect. While, indeed, the amount of such delinquency is not very great, it is sufficiently large to demand great pains on the part of the county clerks to secure full and prompt returns of marriages within the time (ten days) prescribed by law for their return after the performance of the ceremony.

Form of marriage license and return.

No. .... 18...

MARRIAGE LICENSE.

..... County,
State of Michigan.

To any person legally authorized to solemnize marriage,

GREETING:

Marriage may be solemnized between Mr. ..... and M....., affidavit having been filed in this office, as provided by Act 128, Laws of 1887, by which it appears that said ..... is ... years of age, color is ...., residence is ....., and birthplace was ....., occupation is ....., father's name ....., and mother's maiden name was ....., has been previously married .. time..; and that said ..... is ... years of age, color is ...., residence is ....., and birthplace was ....., occupation is ....., father's name ....., and mother's maiden name was ....., and who has been previously married ... time.., and whose maiden name was .....

In witness whereof, I have hereunto attached my hand and the seal of..... county, Michigan, this .... day of ....., A. D. 18...

.....,

[L. S.] *County Clerk.*

CERTIFICATE OF MARRIAGE.

Between Mr. ..... and M.....

I hereby certify that, in accordance with the above license, the persons herein mentioned were joined in marriage by me, at ....., county of ....., Michigan, on the ... day of ....., A. D. 18.., in the presence of ....., of ....., and ....., of ....., as witnesses.

.....,
Name of magistrate or clergyman.

.....,
Official title.

NOTE.—This original is to be returned to the county clerk who issued the same, within ten days after the marriage.

Let us see how the county clerk's records are affected by such neglect on the part of the persons who perform marriages. When a license was issued by the clerk of Isle Royal county to John Brown and Joanna Smith, he immediately proceeded to fill out the proper entry in the permanent books of record provided by the State for that county as far as the facts contained in the affidavit for license permitted. These were (1) the record number assigned; (2) the date of issue of license; (3) the names of parties; (4) ages; (5) color; (6) birthplaces; (7) occupations; (8) names of fathers; (9) names of mothers; and, lastly, (10) whether either party had been previously married, and how many times if so. The essential fact of record, whether a marriage of the parties has actually been performed, as provided in the license, cannot be registered until the clergyman's or justice's certificate is received to that effect. In too many instances this is never received by the county clerk, and the marriage records at the county seat, as well as the transcript thereof at the State Department, contain no conclusive testimony to the fact. The license alone may be regarded as very weak presumptive proof, since in some cases, owing to change of mind or other reasons, the license may be issued but never used. The following is the form of the entry in the county clerk's record, and also in the transcript sent to the State Department; the black-faced type shows the important items that depend on a proper return by the person officiating.

Example of the form of record of a marriage preserved by the county clerk, showing the **essential facts of record** *dependent upon a proper return by the clergyman or magistrate who performed the ceremony.*

Record number.	Date of license.			Full name of bridegroom and bride and maiden name of bride if a widow.	Age of each in years.	White, black, mulatto, etc.	Residence of each.	Birthplace of each.	Occupation of each.	Name of father of each.
	Month.	Day.	Year.							
616	June	30	1892	John Brown	26	White	Isle Royal Tp.	Michigan	Miner	Jas. Brown
				Joanna Smith	22	White	Eagle River	England	Housework	W. Smith

Maiden name of mother of each.	Times previously married.	Date of marriage.			Place of marriage.	Name and official station of person by whom married.	Witnesses to marriage.	
		Month.	Day.	Year.			Names.	Residences.
Anna Dale.	Once	*July*	*3*	*1892*	*Eagle River, Keweenaw Co., Mich.*	*H. James, Clergyman.*	*Anna James*	*Eagle River.*
Mary Dow.	None.						*J. Francis*	*Boston.*

An effort is made by the State Department upon the arrival of the returns for the year, and previous to compilation, to complete these defective records. The returns are carefully examined, the points of deficiency noted in such record numbers as are not complete, and a circular letter sent to each county clerk asking for such additional returns as may have been received since the time of sending in the quarterly transcript. In writing for the corrections of 1892 (the marriages in the present report), 1,282 such delinquent returns were written for, and the records were completed in 978 cases.

As regards the obligation imposed upon clergymen or other persons who officiate at marriages to make a prompt return to the county clerks, the law of the State is very explicit in its requirements:—

"It shall be the duty of the clergyman or magistrate, officiating at a marriage, to fill out the spaces of the certificate left blank for the entry of the time and place of the marriage, the names and residences of two witnesses, and his own signature in certification that the marriage has been performed by him. He shall separate the duplicate license and certificate, and retain one-half for his own record, and he shall return the other half within ten days to the county clerk issuing the same.

* * * * * * * *

"Any clergyman or magistrate who shall join together in marriage parties who have not delivered to him a properly issued license, as provided for in this act, or who shall violate any of the provisions of this act, shall be adjudged guilty of a misdemeanor, and shall be punished by a fine of one hundred dollars, or, in default of payment thereof, by imprisonment in the county jail for a term of ninety days.

"Any person whose duty it shall be to return a marriage certificate to the county clerk, who shall neglect to return said certificate, shall be adjudged guilty of a misdemeanor, and shall be punished by a fine of not exceeding one hundred dollars or ninety days imprisonment, or both, in the discretion of the court."—Act No. 128, Public Acts of 1887, §§ 4, 6 and 7.

Taking into consideration the necessity of the preservation of a legal record of marriages for the protection of property rights, the shielding of the innocent, against whom grievous wrong may be worked by the unlawful suppression of the record of a marriage (witness a celebrated case recently tried in which an important feature was the suppression of the record of a marriage performed in New York city by an eminent clergyman), and from considerations of public policy, which demand that the present just and reasonable marriage law shall be thoroughly carried out by all intrusted with its execution, it may be asserted that *failure to comply strictly with the requirements of the law on the part of clergymen and magistrates authorized to solemnize marriages is inexcusable, and the full penalty of the law should be enforced in every such case.*

The practical difficulty in the enforcement of the law arises from the fact that no officer is designated to see to its execution, and to make complaint in case of neglect to the prosecuting attorney. The county clerks should naturally perform this duty, and from their knowledge of the dates of issue of licenses and of the clergymen and magistrates before whom the marriages are usually performed, would have little difficulty in securing a more careful compliance with the law.

SUMMARY OF THE REGISTRATION OF MARRIAGES IN 1892.

A condensed statement of the principal features of interest in the registration of marriages in Michigan for the year 1892 is herewith presented:

Total number of marriages solemnized,	**20,107**
Marriages per 1,000 estimated population,	**9.2**
Persons married per 1,000 population,	**18.4**
Persons married per 1,000 estimated population of marriageable age (1,381,739),*	**29.1**
Increase of number of marriages registered for the year 1892 (20,107) over the number for 1891 (19,231)	**876**

The largest number of marriages took place in **November** of any month in the year, **2,181 or 10.8 per cent;** the smallest number was recorded for **January, 1,835 or 6.6 per cent.**

Of the 20,107 marriages, there were:

Both bridegroom and bride of native birth,	**11,368**
Both bridegroom and bride of foreign birth,	**4,073**

Including mixed marriages, i. e., those in which the parties were of different nativities, there were married:

Males of native birth,	**13,287**
Males of foreign birth,	**6,799**
Females of native birth,	**13,998**
Females of foreign birth,	**5,619**

Of the 40,214 persons married, the following was the distribution according to color:

White,	**39,789**
Colored (Black, 150; Mulatto, 159; Indian, 116),	**425**

As to age at marriage, the most important groups were:

Males aged 20 to 24 inclusive,	**7,741 or 38.5 per cent.**
Males aged 25 to 29 inclusive,	**6,218 " 30.9 "**
Females aged under 20 years,	**6,223 " 30.9 "**
Females aged 20 to 24 inclusive,	**8,277 " 41.2 "**
Average age of native-born males married in 1892,	**28.0 years.**
Average age of native-born females married in 1892,	**23.2 "**
Average age of foreign-born males married in 1892,	**29.4 "**
Average age of foreign-born females married in 1892,	**24.5 "**
Number of males married below legal age (18 years),	**1**
Number of females married below legal age (16 years),	**11**

* The number of persons in Michigan of marriageable age (18 years and over for males, and 16 years and over for females) in 1892 is thus estimated: There were 1,275,101 persons of both sexes in the State in June, 1890, according to the last census, aged 18 years and over; the corresponding number for 1880 was 964,705. Assuming that the average annual increase from 1880 to 1890 continued for the years 1891 and 1892, the population of Michigan in 1892 aged 18 years and over would be 1,337,180. We have as yet no statement of the population of the State in 1890 by separate years of age, and so do not know how many females were aged 16 or 17 years in 1890. There were 32,147 at those ages in 1880, and if the same ratio to population over 18 exists in 1892 (a fair assumption), we have by proportion,—964,705 : 1,337,180 : : 32,147 : x = 44,559. Adding this estimate of females aged 16 and 17 years in 1892 to the total number of both sexes aged 18 and over for that year, we have as the total estimated population of lawful age to marry, 1,381,739.

MARRIAGE-RATES IN MICHIGAN IN 1892.

Referring to Table 5, Part I, where the rates per 1,000 population for persons married are stated for all previous years of registration, it appears that the rate recorded for 1892, 18.4 per 1,000, is higher than that for any year since 1883. It is 1.3 per 1,000 in excess of the rate for the five-year period 1886-90.

The marriage-rates for individual counties of the State may be found in Table 12, Part I. Owing to their more perfect registration, there is less variation between the different counties compared than obtains for either births or deaths. The following counties show rates decidedly below the State average, 18.4 per 1,000 population:—Alcona, Alger, Antrim, Cheboygan, Iosco, Lake, Mackinac, Manitou, Menominee, Montmorency, Oceana, Ogemaw, Oscoda, Presque Isle, Roscommon and Tuscola. All of these, except Menominee and Tuscola, are thinly populated counties. Benzie, Gogebic and Keweenaw counties are the only ones that show remarkably high marriage-rates. From the high birth- and death-rates also indicated it would appear that these counties have greatly increased in population since 1890, or, what was probably the case, that the census enumeration was very defective. The rates as stated would appear higher, this being true, than they actually are as based upon the correct number of inhabitants in 1892.

The amount of increase or decrease in the actual number of marriages returned from the several counties for the year 1892 as compared with the year immediately preceding, is stated in Table 13, Part I. There were 876 more marriages returned for the State in 1892 than in 1891, this increase being quite uniformly distributed among the counties. Among the counties showing the largest numerical increase are the following:—Branch, 57; Dickinson, 106; Gogebic, 72; Hillsdale, 45; Jackson, 49; Mason, 41, Oakland, 41; Sanilac, 57; Wayne, 255. Kent county showed a decrease of 45 marriages; Marquette of 72; Menominee of 71 and Muskegon of 51.

In the following synopsis, the arrangement and general contents of the tables relating to marriages, are stated:—

Synopsis of tables relating to marriages.

Table.	Marriages in Michigan, 1892.
35.	Marriages by quarters, 1892, compared with 1890-91, and with the average for ten years, 1882-91.
36.	Marriages by months, 1892, compared with 1890-91, and with the average for ten years, 1882-91. Months arranged in order of number of marriages performed in each.
37.	Marriages by months, 1892,—detailed statement by counties.
38.	Number and per cent of persons married, by nativity and sex, 1892.
39.	Marriages in Michigan, by nativity, 1892, compared with 1891, and quinquennial averages for the periods 1871-75, 1876-80, 1881-85, 1886-90.
40.	The average ages, by nativity, of persons married in Michigan in 1892, compared with 1889-91, and with the mean of ten years, 1882-91.
41.	(*a*) Marriages by nativity and (*b*) number of persons married by sex and periods of age in 1892,—detailed statement by counties.
42.	Marriages in 1892 arranged according to the periods of age of bridegrooms and brides.
43.	Number of persons married in Michigan under the legal ages, by sex, during ten years, 1883-92.
44.	Comparison of the per cents of males married at each period of age in 1892, with 1891, and with the quinquennial periods, 1871-75, 1876-90, 1881-85, 1886-90.
45.	Comparison of the per cents of females married at each period of age in 1892, with 1891, and with the quinquennial periods 1871-75, 1876-80, 1881-85, 1886-90.

MARRIAGES BY MONTHS AND QUARTERS.

Table 35 shows the number of marriages returned for each quarter of 1892, and also the relative percentages of the total number returned for each quarter. The last quarter of the year is, as usual, highest on the record, nearly one-third or 31.2 per cent of the year's marriages having been solemnized therein.

The foot-note appended to this table shows the number of delayed marriage returns received from the clerks of several counties since the compilation of last year. In all only nineteen such delayed returns were received, six being those of marriages that occurred in 1890, and thirteen those of marriages in 1891. Several years ago, under the old marriage law, it was not uncommon to record several hundred marriages returned since the compilation of the last report. The present system, which requires a license and an early return of each marriage to the county clerk, has obviated this difficulty and removed all necessity for the tabular comparisons of "marriages returned" and "marriages corrected" given in previous reports.

Table 35.—*Marriages by quarters of the year for each of the years 1890-92, and the average for the years 1882-91. Corrected for additional returns up to March 31, 1893.**

Year and quarters.	1890.		1891.		1892.		Average for 10 years, 1882-91.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Year	18,664	100.0	19,244	100.0	20,107	100.0	17,325	100.0
Quarter ending Mar. 31	3,816	20.4	4,131	21.5	4,332	21.5	3,749	21.6
Quarter ending June 30	4,452	23.8	4,544	23.6	4,884	24.3	4,019	23.2
Quarter ending Sept. 30	4,489	24.1	4,512	23.4	4,619	23.0	4,174	24.1
Quarter ending Dec. 31	5,905	31.6	6,056	31.5	6,267	31.2	5,378	31.0
Unknown	2	.....	1	.....	5	.....	5	.....
Average	4,666	25.0	4,811	25.0	5,027	25.0	4,331	25.0

* Since the last compilation six marriages have been returned for 1890, as follows: Bay, 1; Oceana, 1; Otsego, 4. For 1891 there are thirteen to be added to the number given in the last report: Bay, 6; Eaton, 1; Huron, 2; Kent, 1; Midland, 1; Oceana, 2.

The order of the months, as regards their selection for marriages, is shown in Table 36. November heads the list, as in the ten-year average. The percentage of June marriages continues to increase as in the recent years shown in the table, the rank of that month in 1892 being high above its place in the ten-year average.

Table 36.—*Marriages by months, in order of number, for the years 1890–1892, compared with the averages for the ten years 1882–1891. Corrected for additional returns up to March 31, 1893.**

1890.			1891.			1892.			Average for 10 years, 1882-91.		
Months.	Number.	Per cent of total.	Months.	Number.	Per cent of total.	Months.	Number.	Per cent of total.	Months.	Number.	Per cent of total.
Year.....	18,664	100.0	Year.....	19,244	100.0	Year.....	20,107	100.0	Year.....	17,298	100.0
Nov.....	2,057	11.0	Dec.....	2,086	10.8	Nov.....	2,181	10.8	Nov.....	1,823	10.5
Dec.....	1,994	10.7	Oct.....	1,986	10.3	Dec.....	2,049	10.2	Dec.....	1,773	10.2
Oct.....	1,854	9.9	Nov.....	1,984	10.3	Oct.....	2,037	10.1	Oct.....	1,770	10.2
Sept.....	1,739	9.3	Sept.....	1,749	9.1	Sept.....	1,826	9.1	Sept.....	1,589	9.2
April.....	1,614	8.6	April.....	1,623	8.4	June.....	1,751	8.7	April.....	1,406	8.1
June.....	1,482	7.9	June.....	1,502	7.8	May.....	1,590	7.9	July.....	1,339	7.7
July.....	1,436	7.7	Jan.....	1,466	7.6	April.....	1,543	7.7	May.....	1,315	7.6
May.....	1,356	7.3	May.....	1,419	7.4	Mar.....	1,542	7.7	Jan.....	1,299	7.5
Jan.....	1,315	7.0	Aug.....	1,383	7.2	Feb.....	1,455	7.2	June.....	1,292	7.5
Aug.....	1,314	7.0	July.....	1,380	7.2	Aug.....	1,407	7.0	Mar.....	1,274	7.4
Feb.....	1,252	6.7	Mar.....	1,335	6.9	July.....	1,386	6.9	Aug.....	1,240	7.2
Mar.....	1,249	6.7	Feb.....	1,326	6.9	Jan.....	1,335	6.6	Feb.....	1,172	6.8
Unk.....	2	.....	Unk.....	1	.....	Unk.....	5	.....	Unk.....	5	.....
Av.†.....	1,555	8.3	Av.†.....	1,604	8.3	Av.†.....	1,676	8 3	Av.†.....	1,442	8.3

* See counties from which additional marriages have been added in note to Table 35.
† Average includes unknown month.

The detailed exhibit by counties and months of marriages returned in 1892 is seen in Table 37. To this table is appended as a foot-note a statement of the facts in regard to marriages of colored persons which has formerly been presented in a special table. The total number of colored marriages is so small, however, that this table consisted mainly of blank spaces, and it is believed that the data can be better examined in the condensed form here given. The number of marriages between persons of different race or color is somewhat greater than that recorded for 1891, possibly owing to greater care in specifying the facts.

In Table 11, Part I, will be found a comparison of the number of persons married, by color, with the number of colored births and deaths and with the colored population of the State as given by the last census.

Table 37.—*Distinguishing by counties and by months, the number of marriages returned for the year 1892.*

State and counties.	Year, 1892.	Months, 1892.												
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
State	20,107	1,335	1,455	1,542	1,543	1,590	1,751	1,886	1,407	1,826	2,037	2,181	2,049	5
Alcona	40	.....	2	3	4	.....	7	4	4	7	3	4	2	....
Alger	8	.....	1	.....	1	.....	2	2	1	1	.....	.....	.....	....
Allegan	361	31	29	29	32	16	29	20	20	29	38	35	53	....
Alpena	161	9	16	12	9	13	16	12	12	18	12	16	16	....
Antrim	84	.....	7	6	3	12	7	5	3	12	5	9	14	....
Arenac	50	3	2	1	1	6	4	6	5	3	2	10	7	....
Baraga	45	5	4	1	5	5	2	3	4	3	6	4	3	....
Barry	217	11	12	26	15	20	22	7	10	25	19	21	29	....
Bay	516	40	45	26	34	47	48	31	30	56	48	49	61	1
Benzie	84	2	4	9	9	3	11	8	6	10	4	11	7	....
Berrien	420	29	20	28	28	24	40	31	36	52	48	42	42	....
Branch	302	19	18	31	27	12	24	21	21	18	43	38	30	....
Calhoun	426	20	36	34	37	38	34	26	20	42	40	47	52	....
Cass	188	11	15	18	10	15	14	15	8	12	26	25	19	....
Charlevoix	83	6	7	4	8	4	7	4	12	9	9	7	6	....
Cheboygan	95	5	3	10	9	7	6	6	9	10	13	13	4	....
Chippewa	128	9	7	13	8	8	9	13	8	8	13	17	15	....
Clare	68	1	5	6	12	5	.....	3	11	8	5	6	6	....
Clinton	237	13	11	19	8	24	15	10	13	23	39	33	29	....
Crawford	28	1	5	1	4	5	2	2	1	2	.....	.....	5	....
Delta	147	6	13	7	13	9	10	15	11	17	17	19	10	....
Dickinson	147	12	11	10	9	16	18	8	11	15	14	13	10	....
Eaton	255	27	27	41	24	25	25	22	16	21	34	44	49	....
Emmet	106	10	7	6	6	10	12	9	9	9	7	7	13	....
Genesee	367	17	25	34	35	24	30	24	28	37	37	47	29	....
Gladwin	43	1	4	1	3	5	4	6	1	3	6	4	5	....
Gogebic	236	20	10	5	13	24	21	22	23	28	35	10	24	1
Gd. Traverse	161	12	4	9	13	14	11	16	13	10	15	18	21	....
Gratiot	265	23	23	26	22	21	18	13	9	26	23	25	36	....
Hillsdale	315	19	19	26	20	21	37	22	16	26	38	32	38	1
Houghton	399	37	30	13	31	36	46	18	40	25	41	54	28	....
Huron	281	16	31	19	18	20	29	18	14	23	27	33	33	....
Ingham	384	24	34	26	30	27	37	22	25	33	38	46	42	....

Table 37.—CONTINUED.—*Marriages by counties and months.*

Counties.	Year, 1892.	Months, 1892.												
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
Ionia	339	32	28	35	22	26	24	17	27	24	27	37	40	....
Iosco	114	5	5	9	7	8	10	10	7	13	16	9	15	....
Iron	47	7	2	3	7	4	2	5	2	5	1	3	6	....
Isabella	212	12	18	15	13	19	19	20	19	17	22	20	18	....
Jackson	440	23	30	39	40	29	41	25	27	34	47	52	52	1
Kalamazoo	433	17	37	45	35	36	50	28	22	33	49	48	33	....
Kalkaska	49	1	6	4	4	4	2	3	3	8	1	8	5	....
Kent	1,242	84	89	84	87	102	106	83	91	117	131	141	127	....
Keweenaw	32	3	3	1	2	1	3	1	4	1	2	5	6	....
Lake	49	----	5	6	4	1	6	3	2	7	6	5	4	....
Lapeer	287	20	19	40	23	11	12	22	22	27	36	24	31	....
Leelanau	62	3	2	6	8	6	4	5	4	4	7	6	7	....
Lenawee	421	31	30	55	24	33	28	19	30	49	41	46	35	....
Livingston	183	9	18	17	16	10	10	10	7	19	18	28	21	....
Luce	24	2	2	3	2	1	1	4	1	1	4	1	2	....
Mackinac	51	2	4	2	2	3	6	4	5	6	5	6	6	....
Macomb	243	17	20	12	33	13	25	9	16	15	31	27	25	....
Manistee	229	22	19	9	16	23	16	17	21	23	13	23	27	....
Manitou	2	----	----	----	----	----	----	----	1	----	----	1	----	....
Marquette	396	39	23	18	40	29	31	40	25	35	32	42	42	....
Mason	172	11	7	10	7	22	6	23	14	27	17	12	16	....
Mecosta	190	11	10	15	14	16	16	19	13	14	15	19	28	....
Menominee	162	9	9	7	23	12	14	19	18	8	13	15	15	....
Midland	90	6	5	10	4	5	8	6	4	12	7	8	15	....
Missaukee	45	2	1	1	6	2	4	7	3	5	3	5	6	....
Monroe	327	23	21	22	23	35	20	17	22	33	38	41	32	....
Montcalm	277	23	26	25	17	14	23	22	16	22	22	32	35	....
Montmorency	13	----	1	1	1	1	1	1	----	2	1	2	2	....
Muskegon	331	24	23	25	27	30	33	28	22	33	19	35	32	....
Newaygo	169	10	15	18	14	7	10	21	17	10	18	15	14	....
Oakland	329	21	31	40	22	12	35	11	22	31	22	43	39	....
Oceana	115	5	6	17	5	3	12	9	10	7	10	13	18	....
Ogemaw	40	8	3	1	3	3	1	3	6	3	3	1	5	....
Ontonagon	40	1	1	2	4	3	4	1	4	5	6	6	3	....
Osceola	119	8	4	12	12	6	3	10	9	7	16	13	19	....
Oscoda	14	2	----	----	2	1	2	----	1	----	1	2	3	....

Table 37.—CONCLUDED.—*Marriages by counties and months.*

Counties.	Year, 1892.	Months, 1892.												
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
Otsego	42	2	3	3	6	3	3	7	1	2	2	7	3	....
Ottawa	280	12	17	27	29	29	22	19	15	26	21	31	32	....
Presque Isle	28	1	1	2	6	3	1	1	2	1	.....	7	3	....
Roscommon	9	1	.....	.....	1	1	1	1	2	.....	1	.....	1	....
Saginaw	727	42	46	44	55	78	63	49	59	65	85	80	61	....
Sanilac	277	21	12	22	25	22	29	16	21	19	29	39	22	....
Schoolcraft	82	4	7	1	9	6	5	7	4	13	13	11	2	....
Shiawassee	357	24	19	39	22	18	31	24	27	29	37	41	45	1
St. Clair	502	26	48	36	36	35	43	39	37	41	52	51	58	....
St. Joseph	211	15	16	27	11	9	21	11	15	26	17	21	22	....
Tuscola	248	20	18	22	18	31	20	16	13	20	28	21	21	....
Van Buren	273	25	18	28	14	24	15	17	21	21	29	30	31	....
Washtenaw	362	26	27	28	31	24	32	23	20	41	34	34	42	....
Wayne	2,540	175	202	141	190	247	264	183	196	231	273	265	173	....
Wexford	135	9	11	13	15	13	16	7	7	13	10	10	11	....

NOTE TO TABLE 37.—COLOR OF PERSONS MARRIED IN MICHIGAN, 1892.

Out of the total of 20,107 marriages returned as having occurred in Michigan during the year 1892, 19,894 were between persons white in color. There were 77 marriages of blacks, 80 of mulattoes and 56 between Indians. The white marriages constitute 98.94 per cent of the total marriages of all colors, a preponderance so great as to render any detailed study of marriages by color in Michigan of very trivial importance. There were 27 marriages of mixed race, a somewhat larger number than that recorded for 1891, owing, doubtless, to greater care in noting the details of color. These are included in the totals, white, black, mulatto, etc., the rule being to classify the marriage according to the color of the groom. When the race is given as "half-breed" or "white and Indian," the case has been included is the number of Indians.

BLACK MARRIAGES.—Total for State, 77. By counties:—Wayne, 26; Washtenaw, 15; Berrien, 7, Calhoun, 5; Jackson, 4; Kalamazoo, 3; Cass, Kent, Lenawee, Mecosta, Saginaw, each 2; Bay, Ingham, Ionia, Iron, Monroe, St. Clair, Van Buren, each 1.

MULATTO MARRIAGES.—Total for State, 80. By counties:—Wayne, 32; Cass, 19; Kalamazoo, 7; Kent, 5; Berrien, Calhoun, Van Buren, each 3; Jackson, 2; Emmet Ingham, Mecosta, Montcalm, Newaygo, Saginaw, each 1.

INDIAN MARRIAGES.—Total for State, 56. By counties:—Isabella, 13; Baraga, 11; Mason, 7; Charlevoix, 5; Arenac, Delta, Mackinac, each 2; Alger, Bay, Cheboygan, Chippewa, Emmet, Houghton, Iosco, Kalamazoo, Leelanau, Manistee, Marquette, Missaukee, Oceana, Saginaw, each 1.

MIXED MARRIAGES.—Total for State, 27. Nine white males married colored females, as follows:—black—Kalamazoo, 1; Indian—Baraga, Delta, each 1; Emmet, 3; half-breed—Chippewa, 1; Mackinac, 2. Nine black males married females of other color, as follows:—white—Berrien, Iron, Wayne each 1; Kent, 2; mulatto—Kalamazoo, Wayne, each 2. Two mulatto males married white females—one each in Newaygo and Wayne counties—and three married black females—one in Calhoun, two in Wayne. An Indian male married a white female in each of the counties of Charlevoix, Cheboygan and Mackinac, and in Houghton county the marriage of an Indian male and a black female occurred.

NATIVITY OF PERSONS MARRIED.

Table 38 compares the number of bridegrooms and brides married in Michigan during 1892 with respect to nativity. Nearly two-thirds of the grooms were of native

birth, the percentage (66.1) being slightly larger than that for 1891 (65.6). The percentage of native brides has also slightly increased, while the percentages of foreign males and females married have correspondingly diminished.

Table 38.—*By nativity, the number and per cent of brides and bridegrooms returned for the year 1892.*

Bridegrooms and brides,—nativity specified.		Brides, 1892.			Bridegrooms, 1892.	
		Native-born.	Foreign-born.	Unknown.	Total of each nativity and of all nativities.	Per cent of each nativity.
Bridegrooms	Native-born	11,368	1,544	375	13,287	66.1
	Foreign-born	2,617	4,073	109	6,799	33.8
	Unknown	13	2	6	21	.1
Brides	Whole No. of each nativity and total.	13,998	5,619	490	20,107	
	Per cent of each nativity	69.6	27.9	2.4	.....	100.0

The percentage of marriages of each nativity, including under this heading not only those marriages in which the brides and grooms are both natives of the United States or both foreign-born, but also those groups in which native-born males married foreign-born females and *vice versa*, may be seen in the following table. The corresponding figures for 1891 are stated for the purpose of comparison, and also, by means of the black-faced figures, representing averages for quinquennial periods, the comparison may be extended over previous years of registration, beginning in 1871. With slight exceptions, as in the present year, the ratio of purely native marriages is now steadily decreasing and that of marriages of foreign-born persons is becoming greater.

Table 39.—*Nativity of marriages in Michigan for the years 1891 and 1892; compared with averages for the quinquennial periods, 1871-75, 1876-80, 1881-85, 1886-90.*

Years and periods averaged.	Nativity of marriages.				
	Both native-born.	Both foreign-born.	Native groom and foreign bride.	Foreign groom and native bride.	One or both unknown.
Average, 1871-75	**59.7**	**18.5**	**7.0**	**12.3**	**2.6**
Average, 1876-80	**63.2**	**14.0**	**7.4**	**13.3**	**2.2**
Average, 1881-85	**58.2**	**19.4**	**8.7**	**12.4**	**1.3**
Average, 1886-90	**56.4**	**20.3**	**8.1**	**13.2**	**2.0**
Year 1891	55.7	20.2	7.8	13.6	2.7
Year 1892	56.5	20.3	7.7	13.0	2.5

AVERAGE AGE AT MARRIAGE, BY NATIVITY.

The average ages for each year given in Table 40 are obtained by multiplying the number of persons of each sex and nativity who married at each age into the age of marriage and dividing the sums of these products by the respective totals for each nativity. Such figures obtained for 1892 correspond quite closely to those given for the years 1889-91, and to the ten-year average. Males of native birth are over a year

younger at marriage, on the average, than those of foreign birth, and native females marry nearly two years younger than foreign. The difference in the latter case in 1892, however, was only 1.3 years.

Table 40.—*The average ages, by nativity, of persons married in Michigan during the year 1892; compared with the corresponding figures for 1889–1891 and with the mean of the averages for the ten years 1882–1891.*

Nativity of persons married.	1889.		1890.		1891.		1892.		Mean of the average ages for 10 years, 1882-91.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
Total	28.2	23.5	28.9	24.3	28.5	23.6	28.5	23.7	28.5	23.6
Native-born	27.9	22.9	28.1	22.8	28.0	23.0	28.1	23.2	27.9	23.0
Foreign-born	29.0	24.5	29.3	24.6	29.3	24.7	29.4	24.5	29.3	24.6
Unknown	26.3	25 8	27.0	25.6	29.3	27.3	28.9	27.5	29.1	24.9

Table 41 is really a union of two distinct tabular statements. The portion on the left of the central column give a detailed exhibit for the State and counties of the number of marriages of each nativity. The remainder of the table states the number of persons married, by sex, at each period of age. Three-fourths of all persons married were between 20 and 25 years of age at the time of union; comparisons of marriage-ages, by sex, can be better made by means of Tables 42–45, following:

With respect to the distribution of marriages, by nativity, among the counties of the State, very much of interest may be observed. Great differences exist in the relative numbers of native and foreign marriages in the thickly-settled southern part of the Lower Peninsula, which is slightly affected by immigration, and the rapidly growing communities of Northern Michigan. In these latter there has been a great influx of foreigners seeking employment in the mining and lumbering industries, and the records of certain counties show that the purely American population is so small that marriages in which both parties are native-born are quite exceptional.

In Dickinson county the marriages of foreign-born couples numbered 108, while those of native-born couples were only 14.

In Gogebic county there were returned 189 foreign marriages and only 19 marriages of native couples.

In Houghton county the proportion was: foreign, 239; native, 83.

In Marquette: foreign, 244; native, 60.

On the other hand, Allegan shows 286 native couples to only 23 foreign; Berrien, 315 to 40; Branch, 272 to 4; Calhoun, 334 to 21; Cass, 162 to 2; Clinton, 201 to 4; Eaton, 323 to 3; Genesee, 274 to 17; Hillsdale, 260 to 3; Ingham, 291 to 30; Ionia, 284 to 10; Lenawee, 340 to 22; Monroe, 273 to 11; Oakland, 243 to 15; Shiawassee, 277 to 21; Van Buren, 240 to 2.

The counties containing large cities show generally a large proportion of foreign marriages, but not in excess of those of natives. In Wayne county during the year there were 915 foreign marriages to 921 native ones.

It is probable that foreign-born marriages will soon be in excess for the county of Wayne, as they already are for the city of Detroit.

The list of counties given above showing a large excess of native-born marriages will be found, on examination, to correspond with the list of counties given in the last report (Exhibit 26, page 20) which showed an actual loss of population during the ten-year period between the last two United States censuses.

Table 41.—*Exhibiting for the State and counties (a) the number of marriages by nativity, and (b) the number of persons married by sex and age in periods of years.*

State and counties.	Number of marriages, 1892.	(a) Number of marriages, by nativity, 1892.									Sex.	(b) Number of persons married, by groups of ages, 1892.														
		Both native-born.	Both foreign-born.	Foreign-born males, native females.	Foreign-born females, native females.	Females unknown. Males. Native.	Females unknown. Males. Foreign.	Males unknown. Females. Native.	Males unknown. Females. Foreign.	Both unknown.		Under 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Both unknown.
State	20,107	11,368	4,073	2,617	1,544	375	109	13	2	6	Total	6,603	16,018	9,059	3,613	1,720	1,034	729	504	329	280	174	85	35	13	18
											Males	380	7,741	6,218	2,564	1,140	640	459	317	210	186	133	72	30	11	6
											Females	6,223	8,277	2,841	1,049	580	394	270	187	119	94	41	13	5	2	12
Alcona	40	12	11	9	7	1					Males	2	19	9	6	2					2					
											Females	18	13	4	2	1	1				1					
Alger	8	4	2	1	1						Males		2	2	2	2										
											Females	3	2	3												
Allegan	361	286	23	28	21	3					Males	9	148	93	37	19	10	11	8	7	8	4	5	1	1	
											Females	110	150	40	20	9	6	7	6	3	6	2	2			
Alpena	161	27	67	34	22	4	7				Males	2	51	65	19	10	6	5	3							
											Females	63	60	17	11	6	1	2	1							
Antrim	84	48	10	18	7	1					Males		33	27	8	7	4	2	2	1						
											Females	35	23	15	3	3	1	3	1							
Arenac	50	20	11	14	4	1					Males	1	25	14	3	2	3	1		1						
											Females	29	15	4			1	1								
Baraga	45	18	18	4		1	4				Males		17	16	6	3	1		1							1
											Females	15	19	5	3	1		1		1						

Barry	217	187	3	13	3	8	3				Males	5	93	55	23	13	7	8	6	2	3		1		1		
											Females	80	81	20	12	10	4	2	4			3					1
Bay	516	185	138	105	64	17	7				Males	8	199	166	66	34	19	8	7	3	2	3					1
											Females	158	219	71	26	20	11	4	4	1	1						1
Benzie	84	54	9	16	5						Males		28	30	11	8	1	3					3				
											Females	36	29	8	3		3	2			2	1					
Berrien	420	315	40	36	15	13	1				Males	10	162	116	46	35	15	9	6	4	7	3	1	4	2		
											Females	127	169	56	24	8	12	9	3	2	5	1	1	1	1	1	
Branch	302	272	4	13	6	6	1				Males	11	124	73	33	22	12	8	8	6	3	1		1			
											Females	100	122	35	14	12	3	9	3	4							
Calhoun	426	334	21	33	20	13	4			1	Males	17	177	105	70	23	11	6	6	3	3	2	1	1		1	
											Females	111	200	52	29	12	9	4	3	1	2	1		1		1	
Cass	188	162	2	11	5	8					Males	7	77	54	20	7	10	1	3	4	3	1	1				
											Females	63	75	24	9	6	3	3	1		3	1					
Charlevoix	83	55	5	13	8	1	1				Males	2	40	17	4	6	4	2	4	4							
											Females	32	32	7	3	2		1	2	2	1	1					
Cheboygan	95	31	26	13	12	9	3	1			Males	1	43	19	20	2	3	2	3	1	1						
											Females	87	44	2	4	5	3										
Chippewa	128	12	84	12	20						Males		39	50	24	9	4	1	1									
											Females	87	56	20	8	3	2	1	1								
Clare	68	40	11	7	7	2	1				Males	7	26	16	8	4	3	2	1		1						
											Females	37	19	3	3	3	2		1								
Clinton	237	201	4	14	12	6					Males	5	99	63	29	16	9	4	2	1	3	4	1		1		
											Females	72	104	34	8	5	5	1	2	4	1			1			
Crawford	28	12	7	7	1	1					Males	1	11	7	3	3	1	1	1								
											Females	7	14	4	1	1		1									
Delta	147	33	74	30	10						Males	1	38	64	29	10	3			1	1						
											Females	49	53	32	9	2		1	1								

Table 41.—CONTINUED.—*Marriages by counties, nativity and periods of age.*

Counties.	Number of marriages, 1892.	(a) Number of marriages, by nativity, 1892.									Sex.	(b) Number of persons married, by groups of ages, 1892.														
		Both native-born.	Both foreign-born.	Foreign-born males, native females.	Foreign-born females, native males.	Females unknown, Males.		Males unknown, Females.		Both unknown.		Under 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Both unknown.
						Native.	Foreign.	Native.	Foreign.																	
Dickinson	147	14	108	22	3	...	...	...	...	...	Males	...	54	56	25	4	5	2	1	...	...	...	...	...	...	...
											Females	37	69	29	4	5	1	2	...	...	...	...	...	...	...	...
Eaton	355	323	3	21	8	...	...	...	...	...	Males	8	156	86	40	22	9	10	9	3	5	3	3	...	1	...
											Females	102	152	44	23	7	6	6	7	5	2	...	1	...	...	...
Emmet	105	60	14	16	9	6	...	...	...	...	Males	3	44	30	9	8	1	2	3	3	1	1	...	...	...	...
											Females	40	36	16	5	3	2	...	2	1	...	...	...	...	...	...
Genesee	367	274	17	38	27	8	3	...	...	...	Males	11	139	103	43	25	8	14	5	6	3	2	6	2	...	...
											Females	106	155	50	19	10	8	7	2	4	4	2	...	...	...	...
Gladwin	43	24	7	3	6	1	1	1	...	...	Males	2	12	15	10	2	1	...	...	1	...	...	...	...	...	...
											Females	23	14	3	1	...	1	...	1	...	...	...	...	...	...	...
Gogebic	236	19	189	15	10	1	2	...	...	...	Males	3	85	102	31	7	6	...	2	...	...	...	...	...	...	...
											Females	59	114	48	8	4	3	...	...	...	...	...	...	...	...	...
Gd. Traverse	161	110	11	16	22	2	...	...	...	...	Males	3	66	47	26	9	4	2	1	2	...	1	...	...	...	...
											Females	66	56	22	7	4	4	2	...	...	...	...	...	...	...	...
Gratiot	265	207	6	19	11	19	3	...	...	...	Males	8	122	61	32	12	12	3	2	3	4	2	3	1	...	...
											Females	131	80	24	6	5	7	3	2	2	4	...	1	...	...	...
Hillsdale	315	260	3	15	3	31	1	2	...	...	Males	11	140	72	37	15	3	9	7	9	4	5	3	...	...	...
											Females	99	114	43	20	12	9	4	1	6	2	2	1	1	...	1

Houghton	399	83	239	52	24	.....	1	.....	.....	.....	Males	4	146	140	61	17	15	8	3	1	2	2	.....	.....	..	--
											Females	126	178	54	19	6	4	7	2	2	.....	.....	.....	.....	..	1
Huron	281	80	86	70	41	2	2	.....	.....	.....	Males	1	100	111	33	14	8	6	3	1	1	1	2	.....	..	--
											Females	106	122	25	12	5	5	3	1	.....	2	.....	.....	.....	..	--
Ingham	384	291	30	36	22	5	.....	.....	.....	.....	Males	7	150	114	36	24	13	10	9	7	7	3	3	2	..	--
											Females	102	158	51	22	16	12	10	8	.....	3	2	.....	.....	..	--
Ionia	339	284	10	26	15	3	1	.....	.....	.....	Males	13	146	83	43	21	12	5	7	1	6	2	.....	.....	..	--
											Females	117	136	35	19	12	7	7	2	2	2	.....	.....	.....	..	--
Iosco	114	39	41	21	13	.....	.....	.....	.....	.....	Males	1	52	40	14	2	2	2	1	.....	.....	.....	.....	.....	..	--
											Females	48	41	17	6	.....	1	.....	.....	1	.....	.....	.....	.....	..	--
Iron	47	6	31	6	3	.....	1	.....	.....	.....	Males	.....	14	21	9	2	1	.....	.....	.....	.....	.....	.....	.....	..	--
											Females	16	19	9	3	1	.....	.....	.....	.....	.....	.....	.....	.....	..	--
Isabella	212	129	18	29	23	10	3	.....	.....	.....	Males	4	92	63	20	9	7	9	3	1	3	1	.....	.....	..	--
											Females	99	72	16	8	9	.....	1	2	2	2	1	.....	.....	..	--
Jackson	440	353	25	40	20	1	.....	.....	.....	1	Males	13	182	136	40	26	16	7	4	6	4	4	.....	2	..	--
											Females	132	174	65	17	25	15	4	5	1	1	1	.....	.....	..	--
Kalamazoo	433	316	55	31	26	5	.....	.....	.....	.....	Males	3	170	104	52	32	14	16	14	9	5	7	6	1	..	--
											Females	97	168	70	35	21	17	14	4	1	5	1	.....	.....	..	--
Kalkaska	49	35	2	8	1	2	1	.....	.....	.....	Males	.....	19	18	4	4	1	1	.....	.....	1	1	.....	.....	..	--
											Females	26	12	4	3	1	1	.....	.....	1	1	.....	.....	.....	..	--
Kent	1,242	714	278	158	83	6	2	1	.....	.....	Males	32	441	382	183	70	45	43	17	9	13	4	2	1	..	--
											Females	329	526	189	81	37	34	23	10	5	7	1	.....	.....	..	--
Keweenaw	32	5	17	8	2	.....	.....	.....	.....	.....	Males	1	9	10	6	5	1	.....	.....	.....	.....	.....	.....	.....	..	--
											Females	10	13	5	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	..	--
Lake	49	28	7	6	5	2	1	.....	.....	.....	Males	3	18	12	9	2	1	1	2	1	.....	.....	.....	.....	..	--
											Females	23	17	6	.....	1	.....	1	.....	.....	1	.....	.....	.....	..	--
Lapeer	287	170	28	63	25	.....	1	.....	.....	.....	Males	5	134	68	30	11	11	6	8	4	6	2	.....	.....	2	--
											Females	86	132	33	12	6	4	3	3	3	3	1	1	.....	..	--

Table 41.—CONTINUED.—*Marriages by counties, nativity and periods of age.*

Counties.	Number of marriages, 1892.	(a) Number of marriages, by nativity, 1892.									Sex.	(b) Number of persons married, by groups of ages, 1892.														
		Both native-born.	Both foreign-born.	Foreign-born males, native females.	Foreign-born females, native males.	Females unknown. Males. Native.	Females unknown. Males. Foreign.	Males unknown. Females. Native.	Males unknown. Females. Foreign.	Both unknown.		Under 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Both unknown.
Leelanau	62	36	10	8	7					1	Males	1	14	25	10	3	4	2		2				1		
											Females	18	24	11	2	1	4		1		1					
Lenawee	421	340	22	34	18	6	1				Males	12	164	112	48	19	19	12	12	5	4	8	4	2		
											Females	112	177	57	25	12	11	4	6	8	6	3				
Livingston	183	146	2	15	13	7					Males	3	75	41	23	13	5	6	3	4	5	2	2	1		
											Females	50	76	27	9	5	2	4	3	3	2	2				
Luce	24	2	18	2	2						Males		5	10	6	1		1		1						
											Females	10	8	1	3	1			1							
Mackinac	51	22	15	7	7						Males	2	13	16	11	5	1	1	2							
											Females	18	20	4	6	1			1	1						
Macomb	243	157	23	37	20	4	2				Males	2	106	72	35	9	8	3	1	1	1	3	1	1		
											Females	72	105	41	11	2	4	4		1	1	1	1			
Manistee	229	78	100	33	18						Males	6	77	88	26	11	9	6	3	2	1		1	1		
											Females	83	91	27	10	5	6	2	2	2		1				
Manitou	2	2									Males				2											
											Females	1		1												
Marquette	396	60	244	68	24						Males		152	160	54	17	7	4	2							
											Females	106	186	73	15	7	4	4	1							

Mason	172	79	53	21	17	3					Males	1	56	43	33	13	5	6	6	3	3	3	1				
											Females	57	47	30	15	8	4	3	5	2		1					
Mecosta	190	116	19	28	15	10	2				Males	3	75	61	22	10	4	6	3	2	2	2					
											Females	79	75	12	10	4		4	5	1							
Menominee	162	29	87	33	9	1	2			1	Males	2	64	53	17	15	2	2	3	1		1					2
											Females	54	69	23	6	5	1			1	1						2
Midland	90	53	8	13	14		2				Males	2	38	26	12	3	1	5	1	1	1						
											Females	46	28	6	2	4	4										
Missaukee	45	24	8	9	4						Males		17	15	9	1	2					1					
											Females	22	17	2	2	1			1								
Monroe	327	273	11	26	9	8					Males	8	125	105	29	23	9	11	6	3	6	1		1			
											Females	111	115	49	28	9	5	4	4		2						
Montcalm	277	191	20	32	21	10	2	1			Males	11	130	59	27	17	12	7	3	4	3	4					
											Females	121	90	29	10	7	6	6	3	2	1	1	1				
Montmorency	13	1	7	2	2	1					Males		3	4	6												
											Females	9	3			1											
Muskegon	331	161	92	54	21	2				1	Males	6	120	111	43	23	12	5	4	2	2	1	2				
											Females	108	139	41	18	6	9	3	4	1	1		1				
Newaygo	169	122	16	21	6	3	1				Males	3	65	54	20	6	7	4	2	2	3	2			1		
											Females	71	61	18	6	1	3	3	2	3				1			
Oakland	329	243	15	29	22	17	3				Males	2	123	110	31	21	8	10	4	6	6	3	3	2			
											Females	91	140	46	16	7	9	4	7	4	3	1	1				
Oceana	115	88	6	7	10	3	1				Males	1	46	32	19	7	2	2	1	1	2	1	1				
											Females	50	38	9	7	2	3	3	2	1							
Ogemaw	40	17	9	8	6						Males		14	14	7	2	2		1								
											Females	21	13	5			1										
Ontonagon	40	19	9	11			1				Males		16	16	4	3		1									
											Females	12	20	3	3	1			1								

Table 41.—Concluded.—*Marriages by counties, nativity and periods of age.*

Counties.	Number of marriages, 1892.	(a) Number of marriages, by nativity, 1892.									Sex.	(b) Number of persons married, by groups of ages. 1892.													
		Both native-born.	Both foreign-born.	Foreign-born males, native females.	Foreign-born females, native males.	Females unknown. Males. Native.	Females unknown. Males. Foreign.	Males unknown. Females. Native.	Males unknown. Females. Foreign.	Both unknown.		Under 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Both unknown.
Osceola	119	63	18	21	11	6					Males	7	52	34	14	5	2	2		3						
											Females	59	33	15	3	3	2	1	1	2						
Oscoda	14	7	2	4		1					Males	1	4	2	4						2		1			
											Females	8		1	2	1			2							
Otsego	42	9	13	8	4	7	1				Males	1	17	12	8		2	2								
											Females	16	18	2	2	4										
Ottawa	280	166	39	48	14	10	1	2			Males	7	103	85	42	17	9	3	4	3	1	4	2			
											Females	87	115	41	11	8	5	5	3	4						1
Presque Isle	28	10	9	6	3						Males		15	7	3	1	1			1						
											Females	14	9	1	2	2										
Roscommon	9	6	1	1	1						Males		4	3				1			1					
											Females	4	2	1		1			1							
Saginaw	727	323	140	145	90	16	8	4	1		Males	9	264	224	111	44	26	17	11	9	5	6		1		
											Females	203	313	104	46	25	15	6	3	4	4	3				1
Sanilac	277	75	78	74	44	3	2		1		Males	2	99	90	42	12	10	2	7	5	3	5				
											Females	90	125	34	9	6	5	3	3		1		1			
Schoolcraft	82	15	45	13	6	2	1				Males		27	33	15	4	3										
											Females	25	36	14	6	1										

| | | |

Table 42 shows some interesting facts in regard to the number of marriages at different periods of age of the contracting parties. Beginning with the left upper corner of the body of the table, and reading down the vertical columns, we see that 324 females under 20 years of age married males under 20; 3,615 females under 20 married males aged from 20 to 25 years, etc. The total number of females married under 20 years of age was 6,223, which number was 30.9 per cent of all females married. The corresponding facts in regard to males of each age may be noted by reading the horizontal lines of the table. The largest number of marriages took place between males aged from 20 to 25 and females of the same period of age. The next largest group is that of males aged 20 to 25 and females aged less than 20 years. From these groups the numbers become less, gradually for males, more abruptly for females, with advancing years.

Table 42.—*Exhibiting the number of each sex, at each period of age, married during the year 1892, and the per cent of brides and bridegrooms at each period of age to total of all age.*

Ages of males, 1892.	Ages of females, 1892.														Total males.	Per cent of grooms at each age.
	Under 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.		
Under 20	324	51	5	.....	.....	....	....	....	....	....	....	....	....	....	....	380	1.9
20 to 25	3,615	3,705	358	46	12	1	....	....	1	1	....	....	....	....	2	7,741	38.5
25 to 30	1,689	3,050	1,274	158	38	4	3	....	....	....	....	....	....	....	2	6,218	30.9
30 to 35	423	1,001	692	351	78	12	5	2	....	....	....	....	....	....	....	2,564	12.8
35 to 40	107	301	278	234	144	58	13	2	1	....	....	....	....	....	2	1,140	5.7
40 to 45	30	104	127	122	118	102	33	2	2	....	....	....	....	....	....	640	3.2
45 to 50	21	38	65	73	97	80	58	17	8	....	1	....	....	....	1	459	2.3
50 to 55	7	21	27	44	47	63	49	38	12	6	3	....	....	....	....	317	1.6
55 to 60	1	4	13	11	24	31	45	45	25	8	2	1	....	....	....	210	1.0
60 to 65	1	2	2	6	11	16	39	41	23	35	8	1	1	....	....	186	.9
65 to 70	2	.....	.....	2	8	15	19	26	24	21	12	2	1	1	....	133	.7
70 to 75	.....	.....	.....	....	1	9	3	12	15	17	10	5	....	....	....	72	.4
75 to 80	2	.....	.....	2	1	2	3	2	7	3	5	2	1	....	....	30	.1
80 and over	.....	.....	.....	.....	1	1	....	....	1	3	....	2	2	1	....	11	.....
Unknown	1	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	5	6	....
Total females	6,223	8,277	2,841	1,049	580	394	270	187	119	94	41	13	5	2	12	20,107	.....
Per cent of brides at each age	30.9	41.2	14.1	5.2	2.9	2.0	1.3	.9	.6	.5	.2	.1	....	....	.1	.....	100.0

MARRIAGES UNDER LEGAL AGE IN MICHIGAN, 1892.

In twelve instances the ages of persons married were returned as being below the limit that the law establishes, namely, eighteen years for males and sixteen years for females. One of these cases was that of a male aged seventeen years reported from

Washtenaw county. The remainder were all females—one of fourteen years from Iosco county, and ten of fifteen years, as follows: Bay, 1; Gladwin. 1; Huron, 2; Iosco, 1; Jackson, 1; Mackinac, 1; Oakland. 1; Schoolcraft, 1; Wayne, 1. With two exceptions—those from Jackson and Wayne counties—all were of native birth. For the purpose of comparison the number of persons married below legal age for each year of the preceding decennium is presented:—

Table 43.—*Persons married in Michigan under the legal ages. 1883-92.*

Year.	Sex.	Total.	Ages.					
			12	13	14	15	16	17
1883	Males	7	.....	.....	.....	.....	1	6
	Females	135	.....	5	28	102	.....	.....
1884	Males	6	.....	.....	.....	.....	1	5
	Females	123	.....	5	20	98	.....	.....
1885	Males	8	.....	.....	.....	1	2	5
	Females	147	1	4	21	121	.....	.....
1886	Males	7	.....	.....	.....	.....	1	6
	Females	126	1	3	21	101	.....	.....
1887	Males	6	.....	.....	.....	.....	1	5
	Females	97	.....	2	19	76	.....	.....
1888*	Females	26	.....	.....	5	21	.....	.....
1889*	Females	19	1	.....	.....	18	.....	.....
1890*	Females	12	.....	.....	2	10	.....	.....
1891	Males	2	.....	.....	.....	.....	1	1
	Females	10	.....	1	.....	9	.....	.....
1892	Males	1	.....	.....	.....	.....	.....	1
	Females	11	.....	.....	1	10	.....	.....
Total, ten years, 1883-92	Males	37	.....	.....	.....	1	7	29
	Females	706	3	20	117	566	.....	.....

* No males were reported to have been married under the legal age in these years.

While many facts of interest may be derived from an examination of Table 42, which contains the results of a single year, the general condition of marriages in this State, so far as the age-relations of the contracting parties is concerned, may be better studied in Tables 44 and 45, following, in which the percentages of males and females married at each period of age in the year 1892 are compared with the preceding year and with five-year averages showing in condensed form the experience of the twenty years, 1871-90.

Table 44 shows a slight rise in the percentage of males married under 20 years of age in 1892 as compared with 1891, but for both years this rate is below that of any preceding five-pear period. A rise may be noted in the number of males married at the age periods 20-25 and 25-30 in both years as compared with the period 1886-90, though all earlier periods are above the present rate. The proportions of males married at more advanced periods of age show little change in the entire period of twenty-two years represented in the table.

Table 41.—*Exhibiting for the State and counties (a) the number of marriages by nativity, and (b) the number of persons married by sex and age in periods of years.*

State and counties.	Number of marriages, 1892.	(a) Number of marriages, by nativity, 1892.									Sex.	(b) Number of persons married, by groups of ages, 1892.														
		Both native-born.	Both foreign-born.	Foreign-born males, native females.	Foreign-born females, native females.	Females unknown. Males. Native.	Females unknown. Males. Foreign.	Males unknown. Females. Native.	Males unknown. Females. Foreign.	Both unknown.		Under 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Both unknown.
State	20,107	11,368	4,073	2,617	1,544	375	109	13	2	6	Total	6,603	16,018	9,059	3,613	1,720	1,034	729	504	329	280	174	85	35	13	18
											Males	380	7,741	6,218	2,564	1,140	640	459	317	210	186	133	72	30	11	6
											Females	6,223	8,277	2,841	1,049	580	394	270	187	119	94	41	13	5	2	12
Alcona	40	12	11	9	7	1					Males	2	19	9	6	2					2					
											Females	18	13	4	2	1	1				1					
Alger	8	4	2	1	1						Males		2	2	2	2										
											Females	3	2	3												
Allegan	361	286	23	28	21	3					Males	9	148	93	37	19	10	11	8	7	8	4	5	1	1	
											Females	110	150	40	20	9	6	7	6	3	6	2	2			
Alpena	161	27	67	34	22	4	7				Males	2	51	65	19	10	6	5	3							
											Females	63	60	17	11	6	1	2	1							
Antrim	84	48	10	18	7	1					Males		33	27	8	7	4	2	2	1						
											Females	35	23	15	3	3	1	3	1							
Arenac	50	20	11	14	4	1					Males	1	25	14	3	2	3	1		1						
											Females	29	15	4			1	1								
Baraga	45	18	18	4		1	4				Males		17	16	6	3	1		1							1
											Females	15	19	5	3	1		1		1						

Barry	217	187	3	13	3	8	3				Males	5	93	55	23	13	7	8	6	2	3		1		1		
											Females	80	81	20	12	10	4	2	4			3					1
Bay	516	185	138	105	64	17	7				Males	8	199	166	66	34	19	8	7	3	2	3					1
											Females	158	219	71	26	20	11	4	4	1	1						1
Benzie	84	54	9	16	5						Males		28	30	11	8	1	3					3				
											Females	36	29	8	3		3	2			2	1					
Berrien	420	315	40	36	15	13	1				Males	10	162	116	46	35	15	9	6	4	7	3	1	4	2		
											Females	127	169	56	24	8	12	9	3	2	5	1	1	1	1	1	
Branch	302	272	4	13	6	6	1				Males	11	124	73	33	22	12	8	8	6	3	1		1			
											Females	100	122	35	14	12	3	9	3	4							
Calhoun	426	334	21	33	20	13	4			1	Males	17	177	105	70	23	11	6	6	3	3	2	1	1			1
											Females	111	200	52	29	12	9	4	3	1	2	1		1			1
Cass	188	162	2	11	5	8					Males	7	77	54	20	7	10	1	3	4	3	1	1				
											Females	63	75	24	9	6	3	3	1		3	1					
Charlevoix	83	55	5	13	8	1	1				Males	2	40	17	4	6	4	2	4	4							
											Females	32	32	7	3	2		1	2	2	1	1					
Cheboygan	95	31	26	13	12	9	3	1			Males	1	43	19	20	2	3	2	3	1	1						
											Females	37	44	2	4	5	3										
Chippewa	128	12	84	12	20						Males		39	50	24	9	4	1	1									
											Females	37	56	20	9	3	2	1	1								
Clare	68	40	11	7	7	2	1				Males	7	26	16	8	4	3	2	1		1						
											Females	37	19	3	3	3	2		1								
Clinton	237	201	4	14	12	6					Males	5	99	63	29	16	9	4	2	1	3	4	1		1		
											Females	72	104	34	8	5	5	1	2	4	1			1			
Crawford	28	12	7	7	1	1					Males	1	11	7	3	3	1	1	1								
											Females	7	14	4	1	1		1									
Delta	147	33	74	30	10						Males	1	38	64	29	10	3			1	1						
											Females	49	53	32	9	2		1	1								

Table 41.—CONTINUED.—*Marriages by counties, nativity and periods of age.*

Counties.	Number of marriages, 1892.	(a) Number of marriages, by nativity, 1892.									Sex.	(b) Number of persons married, by groups of ages, 1892.														
		Both native-born.	Both foreign-born.	Foreign-born males, native females.	Foreign-born females, native males.	Females unknown, Males.		Males unknown, Females.		Both unknown.		Under 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Both unknown.
						Native.	Foreign.	Native.	Foreign.																	
Dickinson	147	14	108	22	3	....	.....	.....	.....	.....	Males	.....	54	56	25	4	5	2	1	....	....	....	....	....	..	..
											Females	37	69	29	4	5	1	2	....	....	....	....	....	....	..	..
Eaton	355	323	3	21	8	....	.....	.....	.....	.....	Males	8	156	86	40	22	9	10	9	3	5	3	3	....	1	..
											Females	102	152	44	23	7	6	6	7	5	2	....	1	....	..	..
Emmet	105	60	14	16	9	6	.....	.....	.....	.....	Males	3	44	30	9	8	1	2	3	3	1	1	....	....	..	..
											Females	40	36	16	5	3	2	.....	2	1	....	....	....	....	..	..
Genesee	367	274	17	38	27	8	3	.....	.....	.....	Males	11	139	103	43	25	8	14	5	6	3	2	6	2	..	..
											Females	106	155	50	19	10	8	7	2	4	4	2	....	....	..	..
Gladwin	43	24	7	3	6	1	1	1	.....	.....	Males	2	12	15	10	2	1	.....	....	1	....	....	....	....	..	..
											Females	23	14	3	1	.....	1	.....	1	....	....	....	....	....	..	..
Gogebic	236	19	189	15	10	1	2	.....	.....	.....	Males	3	85	102	31	7	6	.....	2	....	....	....	....	....	..	..
											Females	59	114	48	8	4	3	.....	....	....	....	....	....	....	..	..
Gd. Traverse	161	110	11	16	22	2	.....	.....	.....	.....	Males	3	66	47	26	9	4	2	1	2	....	1	....	....	..	..
											Females	66	56	22	7	4	4	2	....	....	....	....	....	....	..	..
Gratiot	265	207	6	19	11	19	3	.....	.....	.....	Males	8	122	61	32	12	12	3	2	3	4	2	3	1	..	..
											Females	131	80	24	6	5	7	3	2	2	4	....	1	....	..	..
Hillsdale	315	260	3	15	3	31	1	2	.....	..	Males	11	140	72	37	15	3	9	7	9	4	5	3	....	..	..
											Females	99	114	43	20	12	9	4	1	6	2	2	1	1	..	1

Houghton	399	83	239	52	24	.....	1	.....	.....	.....	Males	4	146	140	61	17	15	8	3	1	2	2	.....	.....	..	..
											Females	126	178	54	19	6	4	7	2	2	.....	.....	.....	.....	..	1
Huron	281	80	86	70	41	2	2	.....	.....	.....	Males	1	100	111	33	14	8	6	3	1	1	1	2	.....	..	..
											Females	106	122	25	12	5	5	3	1	.....	2	.....	.....	.....	..	..
Ingham	334	291	30	36	22	5	.....	.....	.....	.....	Males	7	150	114	36	24	13	10	9	7	7	2	3	2	..	..
											Females	102	158	51	22	16	12	10	8	.....	3	2	.....	.....	..	..
Ionia	339	284	10	26	15	3	1	.....	.....	.....	Males	13	146	83	43	21	12	5	7	1	6	2	.....	.....	..	..
											Females	117	136	35	19	12	7	7	2	2	2	.....	.....	.....	..	..
Iosco	114	39	41	21	13	.....	.....	.....	.....	.....	Males	1	52	40	14	2	2	2	1	.....	.....	.....	.....	.....	..	..
											Females	48	41	17	6	.....	1	.....	.....	1	.....	.....	.....	.....	..	..
Iron	47	6	31	6	3	.....	1	.....	.....	.....	Males	.....	14	21	9	2	1	.....	.....	.....	.....	.....	.....	.....	..	..
											Females	16	19	9	2	1	.....	.....	.....	.....	.....	.....	.....	.....	..	..
Isabella	212	129	18	29	23	10	3	.....	.....	.....	Males	4	92	63	20	9	7	9	3	1	3	1	.....	.....	..	..
											Females	99	72	16	8	9	.....	1	2	2	2	1	.....	.....	..	..
Jackson	440	353	25	40	20	1	.....	.....	.....	1	Males	13	182	136	40	26	16	7	4	6	4	4	.....	2	..	..
											Females	132	174	65	17	25	15	4	5	1	1	1	.....	.....	..	..
Kalamazoo	433	316	55	31	26	5	.....	.....	.....	.....	Males	3	170	104	52	32	14	16	14	9	5	7	6	1	..	..
											Females	97	168	70	35	21	17	14	4	1	5	1	.....	.....	..	..
Kalkaska	49	35	2	8	1	2	1	.....	.....	.....	Males	.....	19	18	4	4	1	1	.....	.....	1	1	.....	.....	..	..
											Females	26	12	4	3	1	1	.....	.....	1	1	.....	.....	.....	..	..
Kent	1,242	714	278	158	88	6	2	1	.....	.....	Males	32	441	382	183	70	45	43	17	9	13	4	2	1	..	..
											Females	329	528	189	81	37	34	23	10	5	7	1	.....	.....	..	..
Keweenaw	32	5	17	8	2	.....	.....	.....	.....	.....	Males	1	9	10	6	5	1	.....	.....	.....	.....	.....	.....	.....	..	..
											Females	10	13	5	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	..	..
Lake	49	28	7	6	5	2	1	.....	.....	.....	Males	3	18	12	9	2	1	1	2	1	.....	.....	.....	.....	..	..
											Females	23	17	6	.....	1	.....	1	.....	.....	1	.....	.....	.....	..	..
Lapeer	287	170	28	63	25	.....	1	.....	.....	.....	Males	5	134	68	30	11	11	6	8	4	6	2	.....	.....	2	..
											Females	86	132	33	12	6	4	3	3	3	3	1	1	.....	..	..

Table 41.—CONTINUED.—*Marriages by counties, nativity and periods of age.*

Counties.	Number of marriages, 1892.	(a) Number of marriages, by nativity, 1892.									Sex.	(b) Number of persons married, by groups of ages, 1892.													
		Both native-born.	Both foreign-born.	Foreign-born males, native females.	Foreign-born females, native males.	Females unknown. Males. Native.	Females unknown. Males. Foreign.	Males unknown. Females. Native.	Males unknown. Females. Foreign.	Both unknown.		Under 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Both unknown.
Leelanau	62	36	10	8	7					1	Males	1	14	25	10	3	4	2		2				1		
											Females	18	24	11	2	1	4		1		1					
Lenawee	421	340	22	34	18	6	1				Males	12	164	112	48	19	19	12	12	5	4	8	4	2		
											Females	112	177	57	25	12	11	4	6	8	6	3				
Livingston	183	146	2	15	13	7					Males	3	75	41	23	13	5	6	3	4	5	2	2	1		
											Females	50	76	27	9	5	2	4	3	3	2	2				
Luce	24	2	18	2	2						Males		5	10	6	1		1		1						
											Females	10	8	1	3	1			1							
Mackinac	51	22	15	7	7						Males	2	13	16	11	5	1	1	2							
											Females	18	20	4	6	1			1	1						
Macomb	243	157	23	37	20	4	2				Males	2	106	72	35	9	8	3	1	1	1	3	1	1		
											Females	72	105	41	11	2	4	4		1	1	1	1			
Manistee	229	78	100	33	18						Males	6	77	86	26	11	9	6	3	2	1		1	1		
											Females	83	91	27	10	5	6	2	2	2		1				
Manitou	2	2									Males				2											
											Females	1		1												
Marquette	396	60	244	68	24						Males		152	160	54	17	7	4	2							
											Females	106	186	73	15	7	4	4	1							

Mason	172	79	53	21	17	2					Males	1	56	43	33	13	5	6	6	3	3	2	1				
											Females	57	47	30	15	8	4	3	5	2		1					
Mecosta	190	116	19	28	15	10	2				Males	3	75	61	22	10	4	6	3	2	2	2					
											Females	79	75	12	10	4		4	5	1							
Menominee	162	29	87	33	9	1	2			1	Males	2	64	53	17	15	2	2	3	1		1					2
											Females	54	69	23	6	5	1			1	1						2
Midland	90	53	8	13	14		2				Males	2	38	26	12	3	1	5	1	1	1						
											Females	46	28	6	2	4	4										
Missaukee	45	24	8	9	4						Males		17	15	9	1	2					1					
											Females	22	17	2	2	1			1								
Monroe	327	273	11	26	9	8					Males	8	125	105	29	23	9	11	6	3	6	1		1			
											Females	111	115	49	28	9	5	4	4		2						
Montcalm	277	191	20	32	21	10	2	1			Males	11	180	59	27	17	12	7	3	4	3	4					
											Females	121	90	29	10	7	6	6	3	2	1	1	1				
Montmorency	13	1	7	2	2	1					Males		3	4	6												
											Females	9	3			1											
Muskegon	331	161	92	54	21	2				1	Males	6	120	111	43	23	12	5	4	2	2	1	2				
											Females	108	139	41	18	6	9	3	4	1	1		1				
Newaygo	169	122	16	21	6	3	1				Males	3	65	54	20	6	7	4	2	2	3	2			1		
											Females	71	61	18	6	1	3	3	2	3				1			
Oakland	329	243	15	29	22	17	3				Males	2	123	110	31	21	8	10	4	6	6	3	3	2			
											Females	91	140	46	16	7	9	4	7	4	3	1	1				
Oceana	115	88	6	7	10	3	1				Males	1	46	32	19	7	2	2	1	1	2	1	1				
											Females	50	38	9	7	2	3	3	2	1							
Ogemaw	40	17	9	8	6						Males		14	14	7	2	2		1								
											Females	21	13	5			1										
Ontonagon	40	19	9	11			1				Males		16	16	4	3		1									
											Females	12	20	3	3	1			1								

Table 41.—CONCLUDED.—*Marriages by counties, nativity and periods of age.*

Counties.	Number of marriages, 1892.	(a) Number of marriages, by nativity, 1892.									Sex.	(b) Number of persons married, by groups of ages, 1892.														
		Both native-born.	Both foreign-born.	Foreign-born males, native females.	Foreign-born females, native males.	Females unknown. Males. Native.	Females unknown. Males. Foreign.	Males unknown. Females. Native.	Males unknown. Females. Foreign.	Both unknown.		Under 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Both unknown.
Osceola	119	63	18	21	11	6	.....	.....	.....	.....	Males	7	52	34	14	5	2	2	.....	3	.....	.....	.....	.....	.....	.....
											Females	59	33	15	3	3	2	1	1	2	.....	.....	.....	.....	.....	.....
Oscoda	14	7	2	4	.....	1	.....	.....	.....	.....	Males	1	4	2	4	.....	.....	.....	.....	.....	2	.....	1	.....	.....	.....
											Females	8	.....	1	2	1	.....	.....	2	.....	.....	.....	.....	.....	.....	.....
Otsego	42	9	13	8	4	7	1	.....	.....	.....	Males	1	17	12	8	.....	2	2	.....	.....	.....	.....	.....	.....	.....	.....
											Females	16	18	2	2	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ottawa	280	166	39	48	14	10	1	2	.....	.....	Males	7	103	85	42	17	9	3	4	3	1	4	2	.....	.....	.....
											Females	87	115	41	11	8	5	5	3	4	.....	.....	.....	.....	.....	1
Presque Isle	28	10	9	6	3	.....	.....	.....	.....	.....	Males	.....	15	7	3	1	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
											Females	14	9	1	2	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Roscommon	9	6	1	1	1	.....	.....	.....	.....	.....	Males	.....	4	3	.....	.....	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....
											Females	4	2	1	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
Saginaw	727	323	140	145	90	16	8	4	1	.....	Males	9	264	224	111	44	26	17	11	9	5	6	.....	1	.....	.....
											Females	203	313	104	46	25	15	6	3	4	4	3	.....	.....	.....	1
Sanilac	277	75	78	74	44	3	2	.....	1	.....	Males	2	99	90	42	12	10	2	7	5	3	5	.....	.....	.....	.....
											Females	90	125	34	9	6	5	3	3	.....	1	.....	1	.....	.....	.....
Schoolcraft	82	15	45	13	6	2	1	.....	.....	.....	Males	.....	27	33	15	4	3	.....	.....	.....	.....	.....	.....	.....	.....	.....
											Females	25	36	14	6	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

| | | |

DEATHS BY MONTHS AND QUARTERS.

Tables 46 and 47 compare the total number of deaths registered for the year 1892 with the numbers returned for the years immediately preceding, and also with the average for ten years, 1882-91. In Table 46 the comparison is made by quarters of the year, in order, while in Table 47 the numbers returned for each month are given, the months being arranged in order of the number of deaths in each.

So far as the distribution of mortality through the different months and quarters of the year is concerned, it should be remembered that these tables refer solely to deaths *returned*, not to all the deaths that actually occurred. Could we know the actual distribution of deaths through the year, it would, doubtless, be quite different from the order given in Tables 46 and 47. Comparing the number of deaths returned for the months of any registration year, it will be observed that, in general, larger numbers are returned for the latter months of the year, which are nearer to the date of enumeration in May of the year following, and that smaller numbers are returned for the early months of the year which are more remote in time from that date.

This being true as a general statement, it would seem that the deaths returned for the months and quarters of 1892 are distributed in a manner distinctly different from the usual one. The quarter containing the greatest number of deaths is not, as is usually the case, the third, but the last; next in order comes the first quarter, which almost invariably heretofore has shown the smallest number of deaths. As seen in Table 47, the large number of deaths registered for the first quarter of the year depends chiefly on the unusual mortality recorded for the month of January, which had 9.9 per cent of the total deaths of the year instead of about 6.6 per cent, the average per cent for ten years, 1882-91. February also rose above the average, 6.8 per cent, with a per cent of 7.8, but March showed a fall from 8.2 to 8.0 per cent.

The position of January, as first in the order of deaths returned, is unique in the history of Michigan registration. As a rule, this month comes last in the list, not, necessarily, because it is an especially favorable month, but because, with an average mortality so far as the total number of deaths that actually occur are concerned, a smaller proportion of them are recorded than those that occur in any other month, owing to the greater remoteness of this month from the date of enumeration. Only five times previous to 1892 has it risen above twelfth place,—in 1868 and 1889 it stood tenth; in 1879 and 1891, eleventh; and in 1890, eighth in rank,—and its sudden appearance in first place indicates a very excessive mortality during the early part of the year 1892. In both 1890 and 1892 the unusual mortality during the month of January depends, probably, to a large degree on the prevalence of epidemic influenza, and the effect of that disease in increasing the mortality from certain other causes of death.

DEATHS BY SEX.

The number of deaths of males reported for any registration year always considerably exceeds the number of deaths of females. For the year 1892, the ratio was 120.7 to 100,—higher than any year given in Table 48 with the single exception of 1890, which showed the same proportion of male deaths. As the male population of the State is larger than the female population, it is necessary to compare the deaths of each sex, as returned, to the corresponding populations in order to ascertain whether a higher death-rate actually obtains for males. This is done in Table 48, and the results show:

that the mortality for males exceeded that for females by .7 per 1,000 population during the ten-year period 1883-92. For 1892 the difference was even greater, being 1.1 per 1,000.

Table 48.—*Deaths in Michigan, by sex, for each of the years 1880–92 inclusive, with death-rates per 1,000 population of same sex, and ratios of deaths of males to deaths of females. (Still-births included.)*

Year.	Population.		Number of deaths.		Rates per 1,000.		Deaths of males to 100 deaths of females.
	Males.	Females.	Males.	Females.	Males.	Females.	
1880*	862,855	774,582	8,645	7,410	10.0	9.6	116.7
1881	890,372	800,694	10,263	8,910	11.5	11.1	115.2
1882	918,390	826,805	8,713	7,664	9.5	9.3	113.7
1883	946,407	852,917	9,101	7,748	9.6	9.1	117.5
1884*	974,424	879,028	9,589	8,385	9.8	9.5	114.4
1885	998,983	899,542	9,025	7,569	9.1	8.3	119.2
1886	1,013,543	920,055	9,725	8,402	9.6	9.1	115.7
1887	1,033,102	940,569	10,563	8,877	10.2	9.4	119.0
1888	1,052,661	961,082	11,722	10,024	11.1	10.4	116.9
1889	1,072,221	981,596	10,984	9,297	10.2	9.5	118.1
1890*	1,091,780	1,002,109	11,801	9,771	10.8	9.8	120.7
1891	1,111,339	1,022,623	11,908	9,998	10.7	9.7	119.1
1892	1,130,899	1,043,136	11,837	9,809	10.5	9.4	120.7
Av'ge, 1883-92	1,042,036	950,266	10,626	8,988	10.2	9.5	118.2

* Census years (State census, 1884).

Table 49 presents certain details in regard to the relative numbers of the sexes who died at certain ages during the year 1892. Male decedents outnumber the female decedents in every period of age except in those in which child-bearing, and the causes of death incident thereto, increase the mortality of the latter sex. Between the ages of fifteen and forty, the excess of deaths of males is seen to be greatly diminished, and, indeed, except in the period 30–35, is replaced by an excess of female decedents. The excess of male decedents in this period is unusual. As noted under the preceding table, the males form the larger portion of the population, so that a numerical excess of male decedents would be expected to occur at each age. Whether the mortality rate in proportion to the number of each sex at specified periods of age, was greater for either sex at certain periods of age, requires a statement of the number of inhabitants, by sex, at each period of age, which data have not yet been published by the United States census office for the census of 1890. It is to be hoped that these figures will be available by the time of the issue of the next registration report, and also the corresponding figures as obtained by the State census enumeration of 1894.

Table 49.—*Exhibiting, by sex, and by age in periods of years, the number and proportion of persons returned as having died in Michigan during the year 1892. (Still-births included.)*

Ages in years and periods.	Number of deaths, 1892.				Per cent of deaths at each age to total of all ages.			Per cent of each sex to total of both sexes.†				Excess of the sexes by numbers.		Males to 100 females.
	Totals.	Males.	Females.	Unknown.	Totals.	Males.	Females.	Males.	Females.	Excess. Males.	Excess. Females.	Males.	Females.	
All ages	21,729	11,837	9,809	83	100.0	100.0	100.0	54.7	45.3	9.4	.....	2,028	.....	121
Still-births	1,014	597	374	43	4.7	5.0	3.8	61.5	38.5	23.0	.....	223	.....	160
Under 1 *	4,090	2,321	1,760	9	18.8	19.6	17.9	56.9	43.1	13.8	.....	561	.....	132
1 to 2	1,013	545	467	1	4.7	4.6	4.8	53.9	46.1	7.8	.....	78	.....	117
2 to 3	520	290	230	.....	2.4	2.4	2.3	55.8	44.2	11.6	.....	60	.....	126
3 to 4	377	202	175	.....	1.7	1.7	1.8	53.6	46.4	7.2	.....	27	.....	115
4 to 5	281	141	140	.....	1.3	1.2	1.4	50.2	49.8	.4	.....	1	.....	101
All under 5 *	6,281	3,499	2,772	10	28.9	29.6	28.3	55.8	44.2	11.6	.....	727	.....	126
5 to 10	967	532	435	.....	4.5	4.5	4.4	55.0	45.0	10.0	.....	97	.....	122
10 to 15	526	270	256	.....	2.4	2.3	2.6	51.3	48.7	2.6	.....	14	.....	105
15 to 20	770	367	403	.....	3.5	3.1	4.1	47.7	52.3	.....	4.6	.....	36	91
20 to 25	949	466	483	.....	4.4	3.9	4.9	49.1	50.9	.....	1.8	.....	17	96
25 to 30	890	413	477	.....	4.1	3.5	4.9	46.4	53.6	.....	7.2	.....	64	87
30 to 35	808	407	401	.....	3.7	3.4	4.1	50.4	49.6	.8	.....	6	.....	101
35 to 40	725	356	369	.....	3.3	3.0	3.8	49.1	50.9	.....	1.8	.....	13	96
40 to 45	628	314	314	.....	2.9	2.7	3.2	50.0	50.0	.....	.....	.....	.....	100
45 to 50	723	393	330	.....	3.3	3.3	3.4	54.4	45.6	8.8	.....	63	.....	119
50 to 55	726	415	311	.....	3.3	3.5	3.2	57.2	42.8	14.4	.....	104	.....	133
55 to 60	819	471	348	.....	3.8	4.0	3.5	57.5	42.5	15.0	.....	123	.....	135
60 to 65	942	510	432	.....	4.3	4.3	4.4	54.1	45.9	8.2	.....	78	.....	118
65 to 70	1,074	604	470	.....	4.9	5.1	4.8	56.2	43.8	12.4	.....	134	.....	129
70 to 75	1,126	658	468	.....	5.2	5.6	4.8	58.4	41.6	16.8	.....	190	.....	141
75 to 80	1,006	592	414	.....	4.6	5.0	4.2	58.8	41.2	17.6	.....	178	.....	143
80 to 85	779	441	338	.....	3.6	3.7	3.4	56.6	43.3	13.3	.....	103	.....	130
85 to 90	379	205	174	.....	1.7	1.7	1.8	54.1	45.9	8.2	.....	31	.....	118
90 to 95	140	76	64	.....	.6	.6	.7	54.3	45.7	8.6	.....	12	.....	119
95 to 100	28	10	18	.....	.1	.1	.2	35.7	64.3	.....	28.6	.....	8	56
100 and over	4	.....	4	.....	.....	.....	.....	.....	100.0	.....	100.0	.....	4	.....
Unknown ages	425	241	154	30	2.0	2.0	1.6	61.0	39.0	22.0	.....	87	.....	156

* Excluding still-births. † Unknown sex excluded.

DEATHS AND DEATH-RATES BY AGES.

Far more important than sex as affecting the death-rate of a population is its constitution with respect to age. For example, the death-rates for children under five years and for persons aged 65 years and over are very high as compared with the rates for that portion of the population aged from 5 to 14 years, or with the rates for young adults. It is evident on this account that the death-rates of different States cannot well be compared without taking the respective age-constitutions of their populations into consideration, and, indeed, in studying the death-rates of the same State for a series of years, the changes in the proportions of inhabitants at different ages ought to be considered.

Such is the purpose of Table 50. It presents statements of the population at certain fairly representative periods of age for each of the years from 1870 to 1892, inclusive. For the inter-census years estimates are made, assuming a uniform average annual increase, in the same manner that the gross population was estimated in Part I (p. 12). The numbers of deaths during each year at the corresponding ages are taken from the reports for each year, and rates per 1,000 population at the same period of age calculated. Also, the per cents of deaths at each period of age to total deaths at all specified ages are stated, although this ratio has the disadvantage that any epidemic that proves especially fatal at one age-period, by increasing the total number of deaths at all ages, apparently depresses the mortality at all other age-periods, expressed as per cents of that total. As the amount of infant mortality is of special interest, an additional line of death-rates of infants aged less than one year per 1,000 living births is added, which may be compared with the corresponding statements based on population and total deaths given above. Still-births are excluded in this table from both births and deaths.

In order to display the differences in the distribution of the population of the State with respect to age, Table 51 was constructed. In this the number of inhabitants at certain periods of age, and the per cents at those periods to total population are given for each United States and State census from 1870 to 1890. The State census of 1874, unfortunately, did not give a statement of the population at each year of age, nor, indeed, of the number, at each five-year period, and hence the corresponding numbers for that year cannot be given.

These changes in the age-constitution of the population would affect the death-rate in two ways, which would have a tendency to more or less counteract each other. The diminished proportion of infants and children under five years of age would tend to reduce the death-rate, while the increased number of inhabitants aged 65 years and over and the greater proportion at advanced middle age (not shown in the table), would affect the death-rate in a contrary manner. As an example of the net effect of such changes, suppose the population of the State in 1890 to be constituted precisely the same as the population of 1870 as regards the relative numbers at each age-period; then if the mortality for each class be that observed for 1890, we shall have the following numbers of deaths at each period of age: under 5 years, 7,916; from 5 to 14 years; inclusive, 1,926; from 15 to 64 years, inclusive, 7,561; aged 65 years and over, 2,371. The total number of deaths at all ages in 1890, the population being distributed as to age in the same manner as in 1870, would be 19,774 and the death-rate would be 9.4 per 1,000. The actual number of deaths that occurred was 20,250 (still-births excluded in both statements), and the death-rate was 9.7 per 1,000. Thus it appears that the registered death-rate for 1890 is slightly in excess of that for 1870, allowance being made for changes in age-distribution of population. It is probable that comparison of other years in the same manner would show even a greater difference, since the relative mortality of elderly persons was exceptionally high in 1890, owing to the epidemic of influenza.

Table 50.—*Population, deaths, death-rates per 1,000 population, and per cents of deaths at certain specified periods of age, for each of the years 1870–92, inclusive; also ratio of deaths under one year of age to total living births for each year. (Still-births excluded from both births and deaths.)*

	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.
Population; all ages*	1,184,059	1,229,347	1,274,635	1,319,922	1,365,210	1,410,498	1,455,786	1,501,074	1,546,361	1,591,649	1,636,937	1,682,632
Under 1 year	32,629	33,625	34,620	35,616	36,611	37,607	38,603	39,598	40,594	41,589	42,585	43,222
Under 5 years	164,202	168,567	172,932	177,296	181,661	186,026	190,391	194,756	199,120	203,485	207,850	210,804
From 5 to 14, inclusive	286,589	295,006	303,423	311,840	320,257	328,674	337,091	345,508	353,925	362,342	370,759	379,452
From 15 to 64, inclusive	700,743	730,776	760,809	790,842	820,875	850,908	880,940	910,973	941,006	971,039	1,001,072	1,031,177
65 and over	32,513	34,987	37,462	39,936	42,410	44,885	47,359	49,833	52,307	54,782	57,256	60,756
Total deaths at all ages†	10,540	9,462	13,157	13,984	12,036	11,361	11,930	12,195	11,971	13,658	15,364	18,547
Under 1 year	2,428	1,959	3,071	3,290	2,909	2,679	2,780	2,649	2,424	2,806	3,283	3,964
Under 5 years	4,359	3,575	5,348	5,625	4,674	4,334	4,475	4,483	4,212	4,944	5,695	7,125
From 5 to 14, inclusive	996	859	1,201	1,368	953	868	997	1,105	1,209	1,574	1,702	2,298
From 15 to 64, inclusive	3,790	3,518	4,776	5,114	4,565	4,337	4,419	4,528	4,468	4,856	5,363	6,329
65 and over	1,202	1,290	1,527	1,645	1,613	1,553	1,795	1,848	1,881	2,111	2,282	2,510
Death-rates per 1,000 population; all ages†	8.9	7.7	10.3	10.6	8.8	8.1	8.2	8.1	7.7	8.6	9.4	11.0
Under 1 year	74.4	58.3	88.7	92.4	79.5	71.2	72.0	66 9	59.7	67.5	75.7	91.7
Under 5 years	26.5	21.2	30.9	31.7	25.7	23.3	23.5	23.0	21.2	24.3	27.4	33.8
From 5 to 14, inclusive	3.5	2.9	4.0	4.4	3.0	2.6	3.0	3.2	3.4	4.3	4.6	6.1
From 15 to 64, inclusive	5.4	4.8	6.3	6.5	5.6	5.1	5.0	5.0	4.6	5.0	5.4	6.1
65 and over	37.0	36.9	38.1	41.2	38.0	34.6	37.9	37.1	36.0	38.5	39.9	41.3
Total deaths at *specified* ages; per cent‡	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under 1 year	23.5	21.2	23.9	23.9	24.6	24.2	23.7	22.1	20.6	20.8	21.5	21.7
Under 5 years	42.1	38.7	41.6	40.9	39.6	39.1	38.3	37.5	35.8	36.7	37.9	39.0
From 5 to 14, inclusive	9.6	9.3	9.3	9.9	8.1	7.8	8.5	9.2	10.0	11.7	11.3	12.6
From 15 to 64, inclusive	36.6	38.1	37.2	37.2	38.7	39.1	37.8	37.8	38.0	36.0	35.7	34.7
65 and over	11.6	14.0	11.9	12.0	13.7	14.0	15.4	15.4	16.0	15.7	15.2	13.7
Births	26,589	25,904	27,692	34,260	30,687	31,329	33,589	32,671	34,367	33,373	34,585	34,058
Deaths under 1 year per 1,000 births	91.3	75.6	110.9	96.0	94.8	85.5	82.8	81.1	70.5	84.1	98.5	116.4

* Includes 12 of unknown age in 1870; 4,427 of unknown age in 1890. † Including deaths at unknown age. ‡ Not including deaths at unknown age.

Table 50.—CONTINUED.—*Deaths and death-rates at specified periods of age, 1870-92.*

	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
Population; all ages*	1,728,327	1,774,023	1,819,718	1,865,413	1,911,108	1,956,803	2,002,499	2,048,194	2,093,889	2,139,584	2,185,279
Under 1 year	43,859	44,496	45,133	45,770	46,407	47,044	47,681	48,318	48,955	49,592	50,229
Under 5 years	213,758	216,712	219,666	222,620	225,573	228,527	231,481	234,435	237,389	240,343	243,297
From 5 to 14, inclusive	388,146	396,889	405,532	414,226	422,919	431,612	440,305	448,999	457,692	466,385	475,079
From 15 to 64, inclusive	1,061,282	1,091,388	1,121,493	1,151,598	1,181,703	1,211,808	1,241,914	1,272,019	1,302,124	1,332,229	1,362,334
65 and over	64,256	67,756	71,256	74,757	78,257	81,757	85,257	88,757	92,257	95,757	99,257
Total deaths at all ages†	15,633	16,022	17,137	15,638	17,278	18,585	20,406	19,113	20,250	20,989	20,715
Under 1 year	3,213	3,313	3,995	3,337	3,860	4,050	4,625	4,081	4,111	4,368	4,090
Under 5 years	5,583	5,585	6,313	5,252	6,146	6,494	7,122	6,462	6,452	6,575	6,281
From 5 to 14, inclusive	1,835	1,522	1,548	1,318	1,398	1,476	1,446	1,422	1,717	1,541	1,498
From 15 to 64, inclusive	5,584	6,056	6,222	6,030	6,329	6,942	7,703	7,355	7,910	8,062	7,980
65 and over	2,363	2,564	2,791	2,814	3,028	3,382	3,880	3,590	3,864	4,355	4,536
Death-rates per 1,000 population; all ages†	9.0	9.0	9.4	8.4	9.0	9.5	10.2	9.3	9.7	9.8	9.5
Under 1 year	73.3	74.5	88.5	72.9	83.2	86.1	97.0	84.5	84.0	88.1	81.4
Under 5 years	26.1	25.8	28.7	23.6	27.2	28.4	30.8	27.6	27.2	27.3	25.8
From 5 to 14, inclusive	4.7	3.8	3.8	3.2	3.3	3.4	3.3	3.2	3.8	3.3	3.1
From 15 to 64, inclusive	5.3	5.5	5.5	5.2	5.4	5.7	6.2	5.8	6.1	6.1	5.9
65 and over	36.8	37.7	39.2	37.6	38.7	41.4	44.9	40.4	41.9	45.5	45.7
Total deaths at *specified* ages; per cent‡	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under 1 year	20.9	21.1	23.7	21.6	22.8	22.1	23.0	21.7	20.6	21.3	20.2
Under 5 years	36.3	35.5	37.4	34.1	36.4	35.5	35.4	34.3	32.4	32 0	31.0
From 5 to 14, inclusive	11.9	9.7	9.2	8.6	8.3	8.1	7.2	7.6	8.6	7.5	7.4
From 15 to 64, inclusive	36.3	38.5	36.9	39.1	37.5	37.9	38.3	39.1	39.7	39.3	39.3
65 and over	15.4	16.3	16.5	18.2	17.9	18.5	19.1	19.1	19.4	21.2	22.4
Births	36,234	39,925	39,499	41,111	40,186	45,329	47,594	48,070	50,909	49,722	45,207
Deaths under 1 year per 1,000 births	88.7	83.0	101.2	81.2	96.1	89.3	97.2	84.9	80.8	87.8	90.5

* Includes 12 of unknown age in 1870; 4,427 of unknown age in 1890. † Including deaths at unknown age. ‡ Not including deaths at unknown age.

Table 51.—*Comparison of the age-constitutions of the populations of Michigan as stated by the successive United States and State censuses from 1870 to 1890.*

Periods of age.	United States census, 1870.		State census, 1874*		United States census, 1880.		State census, 1884.		United States census, 1890.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
All ages	1,184,059	100.0	1,334,031	100.0	1,636,937	100.0	1,853,658	100.0	2,093,589	100.0
Under 1 year	32,629	2.8	.....	.....	42,585	2.6	49,574	2.7	48,955	2.3
Under 5 years	164,202	13.9	181,855	13.6	207,550	12.7	225,973	12.2	237,389	11.3
From 5 to 14, inclusive	286,589	24.2	.....	.....	370,759	22.6	413,851	22.3	457,692	21.9
From 15 to 64, inclusive	700,743	59.2	.....	.....	1,001,072	61.2	1,143,778	61.7	1,302,124	62.2
Aged 65 and over	32,513	2.7	.....	.....	57,256	3.5	68,400	3.6	92,257	4.4
Unknown ages †	12	.....	.....	.....	.....	.....	1,656	.1	4,427	.2

* Ages not stated by this census in form convenient for comparison.
† Unknown ages distributed *pro rata* among specified ages in censuses of 1870 (?) and 1890.

It appears that the proportions of inhabitants at the earlier periods of age have been steadily decreasing through the last two decades, and that the proportions of those at more advanced ages have been increasing. To this statement one exception may be noted in that the percentage of infants under one year of age was less in 1880 than in 1884. The enumeration of population of less than one year of age is subject to many difficulties and inaccuracies, and it may be due to these that the absolute number of infants under one year is less in 1890 than in 1884.

Table 52 compares the decennial rates of increase of the several periods of age. Rates below the average are shown for the early periods of life, and the decrease in decennial rates of increase is very marked for population under one year and under five years of age, being much greater in proportion than the decrease in the rate for all ages. The experience of Michigan in this respect is accordant with the changes going on in the population of the United States as a whole, and referred to on a previous page (p. 40). The proximate reasons are a steadily diminishing birth-rate and a slightly increasing rate of infant mortality.

Table 52.—*Decennial per cents of increase of population at certain specified periods of age.*

Periods of age.	1880 over 1870.	1884 over 1874.*	1890 over 1880.
All ages	38.25	38.95	27.92
Under 1 year	30.51	.....	14.96
Under 5 years	26.58	24.26	14.21
From 5 to 14, inclusive	29.37	.....	23.45
From 15 to 64, inclusive	42.86	.....	30.07
Aged 65 and over	76.10	.....	61.13

* Ages not stated by census of 1874 in form convenient for comparison.

DEATHS BY PERIODS OF AGE AND MONTHS OF DEATH.

Table 53 exhibits the deaths of 1892 arranged according to the months of death and periods of age of the decedents. Still-births are included and also deaths at unspecified ages, whence the ratios given for deaths under one year and under five years of age differ from the statements made in Table 50. The periods of age above five years are also different from those of Table 50, but agree with the form of this table in previous reports, thus enabling comparisons to be conveniently made with other years. So far as the relative numbers of deaths in the several months is concerned, this table would be far more valuable were it not certain, as already referred to under Tables 46 and 47, that the deaths returned for any month are largely affected by the nearness or remoteness of that month from the date of enumeration in May, 1893.

Including still-births, nearly one-quarter of the total number of deaths recorded are those of infants under one year of age, and over one-third are those of children under five years. About one-third of the total deaths are those of persons aged from five to fifty years, and the remaining third is constituted of persons aged fifty years and over. The per cent of deaths over fifty years of age (32.3 per cent) is somewhat higher than that for 1891 (30.9 per cent), but the ratios of the other ages are generally lower. The comparative death-rates at different ages for successive years can be better studied in Table 50 than here, especially as the constituent populations at the specified ages are there considered.

A very remarkable feature of the returns of deaths for the year 1892 is the high mortality recorded for January, and for the first quarter of the year. This table furnishes valuable information as to the distribution of this mortality according to age at death. Compared with the corresponding table in the last report (Table 49, p. 137, Registration Report of 1891), a slight increase in the per cent of deaths under 5 years is noted for January (6.2 to 7.8); also for the ages 20 to 50 (6.2 to 9.2), but the most striking rise is in deaths of persons aged 50 years and over (7.2 to 13.8). There is only a small increase in the total number of deaths over 50 years in 1892 as compared with 1891, but the number of deaths in January, 1892, at that age is nearly double the number in 1891. Taking the two tables together, and comparing the rates for the successive months, a wave of excessive mortality for elderly persons evidently began in 1891 and reached its climax in January, 1892, from which point it rapidly declined. The latter months of 1892 show an unusually low rate for this class. The causes for these peculiar returns for these years may probably be considered to be the direct and indirect effects of epidemic influenza, the last general appearance of which was during the winter of 1891-92.

For children under one year of age and for children under five years, the maximum mortality, according to the returns, fell in the month of August. The per cents of total deaths during the year are high both for this month and for September on account of the prevalence of the diarrheal diseases at this time, and especially the large number of deaths reported from cholera infantum in the cities. For children aged from five to ten years, the mortality reported was largest for April, November and December. Diphtheria showed corresponding maxima for 1892. The deaths of persons aged twenty to fifty years are distributed with greater regularity through the year than those of younger or more advanced age-periods. The percentage for the early months, however, is unusually high for this class, as has already been pointed out.

Table 53.—*The relation of the deaths at different periods of age to deaths at all ages, by months; and for the same period of age the relation of the deaths in each month to the deaths in the year 1892. (Still-births included.)*

Deaths by ages in periods of years.		Year, 1892.	Months, 1892.											
			Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
All ages		* 21,729	2,152	1,687	1,734	1,879	1,700	1,481	1,678	1,942	1,802	1,892	1,788	1,949
Under 1 †	Number	5,104	386	335	393	392	372	321	451	660	530	430	390	438
	Per cent of all ages	23.5	17.9	19.9	22.7	20.9	21.9	21.7	26.9	34.0	29.4	22.7	21.8	22.5
	Per cent of deaths, 1892	100.0	7.6	6.6	7.7	7.7	7.3	6.3	8.8	12.9	10.4	8.4	7.6	8.6
Under 5 †	Number	7,295	568	492	569	611	554	462	632	866	731	602	562	634
	Per cent of all ages	33.6	26.4	29.2	32.8	32.5	32.6	31.2	37.7	44.6	40.6	31.8	31.4	32.5
	Per cent of deaths, 1892	100.0	7.8	6.7	7.8	8.4	7.6	6.3	8.7	11.9	10.0	8.3	7.7	8.7
5 to 10	Number	967	55	60	74	97	81	81	62	64	87	94	103	105
	Per cent of all ages	4.5	2.6	3.6	4.3	5.2	4.8	5.5	3.7	3.3	4.8	5.0	5.8	5.4
	Per cent of deaths, 1892	100.0	5.7	6.2	7.7	10.0	8.4	8.4	6.4	6.6	9 0	9.7	10.7	10.9
10 to 20	Number	1,296	76	92	104	111	138	95	108	112	100	127	119	111
	Per cent of all ages	6.0	3.5	5.5	6.0	5.9	8.1	6.4	6.4	5.8	5.5	6.7	6.7	5.7
	Per cent of deaths, 1892	100.0	5.9	7.1	8.0	8.6	10.6	7.3	8.3	8.6	7.7	9.8	9.2	8.6
20 to 50	Number	4,723	436	357	412	399	381	350	368	369	362	450	395	441
	Per cent of all ages	21.7	20.3	21.2	23.8	21.2	22.4	23.6	21.7	19.0	20.1	23.8	22.1	22.6
	Per cent of deaths, 1892	100.0	9.2	7.6	8.7	8.4	8.1	7.4	7.8	7.8	7.7	9.5	8.4	9.3
50 and over	Number	7,023	967	657	560	614	516	466	478	496	490	570	573	626
	Per cent of all ages	32.3	44.9	39.0	32.3	32.7	30.4	31.3	28.5	25.5	27.2	30.1	32.0	32.1
	Per cent of deaths, 1892	100.0	13.8	9.4	8.0	8.7	7.3	6.6	6.8	7.1	7.0	8.1	8.2	8.9
Unknown ages	Number	425	50	29	15	47	30	27	30	35	32	49	36	32
	Per cent of all ages	2.0	2.3	1.7	.9	2.5	1.8	1.8	1.8	1.8	1.8	2.6	2.0	1.6
	Per cent of deaths, 1892	100.0	11.8	6.8	3.5	11.1	7.1	6.4	7.1	8.2	7.5	11.5	8.5	7.5

* Including 45 deaths in unknown month. † Including still-births.

In Table 54 a full statement is given, for each county of the State, of the number of persons of each sex who died during each month of the year 1892, and also the ages, grouped in periods of five years, of the decedents in each county. As the number of deaths returned from any county depends to a great extent upon the number of inhabitants, the data given in this table should be considered in connection with Table 12, Part I, in which the death-rates per 1,000 estimated population are calculated. Some interesting comparisons may be found also in Table 13 of the absolute numbers of deaths returned from each county for the two years 1891 and 1892.

The deaths at the first five-year period, children under five years of age, are of especial interest as indicative of the amount of infant mortality. It would have been desirable to have statements of the number of deaths at each age under five years, and also to distinguish between the months of the first year of life, since the death-rate very rapidly diminishes with a slight increase in age at this period. It should be remembered that still-births are included in this table, and also that the numbers returned for each period for different counties may be dependent, to a large extent, upon the special age-distribution of the population. Thus, counties of the Upper Peninsula have usually a larger proportion of children and young adults than the remainder of the State; counties of the southern part of the Lower Peninsula show a predominance of inhabitants of advanced years, and the deaths of children returned from these parts of the State vary in like manner.

In order to obtain a basis of comparison, the death-rates of children under five years of age per 1,000 population of the same age at the last census may be stated for each county. No allowance can be made in such a comparison for growth during the two years 1890–92, but if such growth be distributed with a fair degree of uniformity over the State, the results obtained for the different counties will be roughly comparable.

Taking the average death-rate of the State for children under five years of age (30.7 per 1,000) as the standard, we may distinguish four groups of counties having child mortalities (1) over 50 per cent above the average; (2) less than 50 per cent above the average; (3) less than 50 per cent below the average; and, finally, (4) more than 50 per cent below the average. The counties in each group are as follows:—

Over fifty per cent above the average:—Gogebic, 115.7; Dickinson, Iron, Marquette and Menominee (taken together since Dickinson was formed from the other three since the last census), 52.6; Houghton, 69.0; Keweenaw, 58.7; Luce, 57.3; Wayne, 49.9. *Average of nine counties, 44.8.*

Less than fifty per cent above the average:—Alpena, 31.8; Bay, 38.1; Benzie, 33.2; Cheboygan, 34.7; Delta, 31.8; Iosco, 31.6; Kent, 37.5; Missaukee, 41.7; Muskegon, 33.3; Saginaw, 41.7; Schoolcraft, 31.3; Wexford, 31.7. *Average of 12 counties, 34.9.*

Less than fifty per cent below the average:—Alcona, 28.2; Allegan, 23 3; Antrim, 25.2; Arenac, 27.2; Baraga, 27.7; Berrien, 19.0; Calhoun, 23.5; Charlevoix, 22.9; Chippewa, 23.7; Clare, 20.5; Clinton, 24.4; Crawford, 27.8; Emmet, 18.9; Genesee, 22.5; Grand Traverse, 27.3; Hillsdale, 15.7; Huron, 23.1; Ingham, 25.8; Ionia, 18.9; Isabella, 18.5; Jackson, 27.9; Kalamazoo, 18.9; Kalkaska, 18.1; Leelanau, 18.0; Mackinac, 20.4; Macomb, 23.4; Manistee, 27.3; Mason, 29.6; Mecosta, 20.0; Midland, 23.7; Monroe, 20.3; Oceana, 15.5; Ogemaw, 20.2; Ontonagon, 25.0; Osceola, 17.8; Oscoda, 18.1; Otsego, 25.6; Ottawa, 25.9; Presque Isle, 21.4; Roscommon, 29.5; Sanilac, 21.3; St. Clair, 26.5; St. Joseph, 24.0; Van Buren, 24.2; Washtenaw, 17.8. *Average of 45 counties, 22.8.*

Over fifty per cent below the average:—Alger, 7.1; Barry, 15.1; Branch, 13.7; Cass, 13.0; Eaton, 11.4; Gladwin, 7.9; Gratiot, 14.0; Lake, 12.2; Lapeer, 14.4; Lenawee, 11.6; Livingston, 12.1; Manitou, 10.2; Montcalm, 13.9; Montmorency, 9.1; Newaygo, 14.6; Oakland, 14.9; Shiawassee, 14.1; Tuscola, 15.1. *Average of 18 counties, 12.5.*

Table 54.—*Exhibiting for the State and counties, by sex, the number of deaths returned in each month of the year 1892, and the number of deaths of each period of age.* (*Still-births included.*)

State and counties.	Sex.	Year, 1892.	Months, 1892.												Ages in periods of years, 1892.																
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.
State	Total	21,729	2152	1687	1734	1879	1700	1481	1678	1942	1802	1892	1788	1949	45	7295	967	526	770	949	890	808	725	628	723	726	819	942	1074	1126	1006	1330	425
	Males	11,837	1148	906	944	997	909	817	962	1059	999	1033	990	1051	22	4096	532	270	367	466	413	407	356	314	393	415	471	510	604	658	592	782	241
	Females	9,809	990	777	786	873	788	657	710	879	797	854	785	891	22	3146	435	256	403	483	477	401	369	314	330	311	348	432	470	468	414	598	154
	Unknown	83	14	4	4	9	3	7	6	4	6	5	13	7	1	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	30
Alcona	Total	40	1	1	2	4	7	4	3	3	1	4	5	5	--	20	1	2	---	1	2	1	---	1	1	2	2	2	---	---	3	1	1
	Males	23	---	---	1	2	5	2	1	2	1	3	3	3	-	12	---	1	---	1	---	---	---	1	1	2	1	---	---	---	2	1	1
	Females	17	1	1	1	2	2	2	2	1	---	1	2	2	--	8	1	1	---	---	2	1	---	---	---	---	1	2	---	---	1	---	---
Alger	Total	10	---	---	---	1	---	---	1	1	---	2	3	2	--	1	1	---	---	---	---	2	1	1	1	1	---	---	---	---	---	1	1
	Males	7	---	---	---	1	---	---	---	1	---	---	3	2	--	---	1	---	---	---	---	2	1	---	---	1	---	---	---	---	---	1	1
	Females	3	---	---	---	---	---	---	1	---	---	2	---	---	--	1	---	---	---	---	---	---	---	1	1	---	---	---	---	---	---	---	---
Allegan	Total	356	37	29	36	30	35	16	19	21	27	30	36	39	1	99	18	15	13	6	14	8	13	15	9	7	16	15	25	24	22	27	10
	Males	192	17	14	17	12	19	9	15	12	11	23	22	21	--	57	9	9	4	1	6	5	7	7	6	6	9	7	11	15	12	17	4
	Females	163	20	15	19	18	16	7	4	9	16	7	13	18	1	41	9	6	9	5	8	3	6	8	3	1	7	8	14	9	10	10	6
	Unknown	1	---	---	---	---	---	---	---	---	---	---	1	---	--	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpena	Total	154	5	12	10	12	14	9	8	18	22	14	13	16	1	73	13	1	9	3	7	7	3	3	4	3	2	6	2	2	3	2	11
	Males	87	---	6	7	10	8	3	5	14	11	7	8	8	--	44	8	1	5	2	2	2	1	---	3	3	2	4	1	1	3	2	3
	Females	67	5	6	3	2	6	6	3	4	11	7	5	8	1	29	5	---	4	1	5	5	2	3	1	---	---	2	1	1	---	---	8
Antrim	Total	87	8	7	9	7	8	9	7	5	4	12	5	6	--	32	3	3	4	4	4	4	4	4	5	4	3	2	3	4	1	3	---
	Males	54	6	3	5	4	5	5	5	4	4	7	3	3	--	19	3	2	3	2	2	---	4	4	2	3	3	---	3	3	---	1	---
	Females	33	2	4	4	3	3	4	2	1	---	5	2	3	--	13	---	1	1	2	2	4	---	---	3	1	---	2	---	1	1	2	---

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Table 54.—CONTINUED.—*Deaths by counties, by sex, by months, and by ages, 1892.*

Counties.	Sex.	Year, 1892.	Months, 1892.												Ages in periods of years, 1892.																	
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.
Cass	Total	175	22	10	9	15	11	13	11	12	20	12	16	24	26	5	8	6	12	7	5	8	5	9	5	6	10	17	11	11	22	3
	Males	100	12	6	4	10	7	9	9	4	8	6	10	15	14	1	3	2	7	5	2	3	2	6	3	3	7	10	8	6	16	3
	Females	75	10	4	5	5	4	4	2	8	12	6	6	9	12	4	5	4	5	2	3	5	3	3	2	3	3	7	3	5	6	--
Charlevoix	Total	75	4	4	12	10	6	5	3	5	9	5	5	7	26	1	1	5	4	5	3	3	1	2	1	1	6	2	1	2	3	3
	Males	46	1	1	9	7	3	2	3	3	7	2	3	5	14	---	1	4	2	4	2	2	1	2	1	---	4	1	--	1	2	5
	Females	29	3	3	3	3	3	3	---	2	2	3	2	2	12	1	---	1	2	1	1	1	---	---	---	1	2	1	1	1	1	3
Cheboygan	Total	110	6	7	8	9	11	10	6	17	14	7	4	11	56	8	9	6	3	1	2	2	2	1	3	2	4	2	3	5	--	1
	Males	57	5	6	6	4	5	5	2	3	10	3	1	7	29	6	3	2	2	---	---	1	2	---	2	2	1	1	3	2	--	1
	Females	52	1	1	2	5	6	5	4	14	4	4	3	3	26	2	6	4	1	1	2	1	---	1	1	---	3	1	--	3	--	--
	Unknown	1	---	---	---	---	---	---	---	---	---	---	---	1	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--
Chippewa	Total	98	5	2	8	5	7	14	2	9	10	9	9	16	37	2	2	9	5	3	3	9	2	3	2	1	4	4	2	--	4	6
	Males	55	1	1	5	2	2	9	2	6	7	4	5	9	18	1	2	6	1	---	1	5	2	3	1	---	4	3	2	--	1	5
	Females	43	4	1	3	3	5	5	---	3	3	5	4	7	19	1	---	3	4	3	2	4	---	---	1	1	---	1	--	--	3	1
Clare	Total	45	3	---	1	2	1	1	7	4	4	8	4	5	5	20	---	---	2	3	3	2	1	1	---	1	2	2	2	3	1	2	--
	Males	25	1	---	1	2	---	1	4	3	2	4	1	3	3	9	---	---	---	3	1	1	1	1	---	1	1	1	2	2	--	2	--
	Females	20	2	---	---	---	1	---	3	1	2	4	3	2	2	11	---	---	2	---	2	1	---	---	---	---	1	1	---	1	1	--	--
Clinton	Total	241	23	20	23	22	18	10	23	16	18	19	27	22	61	4	8	6	4	10	8	9	7	9	13	10	11	24	17	15	22	3
	Males	123	16	8	13	10	11	7	15	10	7	8	13	5	32	2	5	4	3	---	6	2	1	5	5	7	6	10	10	6	17	3
	Females	118	7	12	10	12	7	3	8	6	11	11	14	17	29	2	3	2	1	10	2	7	6	4	8	3	5	14	7	9	5	1

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Table 54.—CONTINUED.—*Deaths by counties, by sex, by months, and by ages, 1892.*

Counties.	Sex.	Year, 1892.	Months, 1892.												Ages in periods of years, 1892.																
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.
Gd. Traverse	Total	136	7	14	8	11	11	12	10	8	11	19	15	10	..	39	2	2	3	2	13	6	8	7	10	11	3	9	3	4	5	6	3
	Males	78	6	10	3	4	7	8	7	2	6	12	8	5	..	24	1	....	1	2	3	3	6	3	8	7	2	6	2	2	2	5	1
	Females	56	1	4	5	7	4	4	3	6	5	6	6	5	..	13	1	2	2	....	10	3	2	4	2	4	1	3	1	2	3	1	2
	Unknown	2	....	....	....	....	....	....	....	....	....	1	1	....	..	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Gratiot	Total	188	10	15	12	13	16	13	18	22	23	18	13	15	..	44	6	7	16	10	9	6	7	2	8	8	9	8	11	12	12	12	1
	Males	96	4	8	3	6	6	7	10	13	15	7	8	9	..	29	5	5	6	3	5	1	1	1	3	2	5	4	6	6	8	5	1
	Females	91	6	7	9	6	10	6	8	9	8	11	5	6	..	14	1	2	10	7	4	5	6	1	5	6	4	4	5	6	4	7	..
	Unknown	1	....	....	....	1	....	....	....	....	....	....	....	....	..	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Hillsdale	Total	323	37	32	22	30	26	24	20	31	24	30	24	22	1	41	4	8	9	9	7	12	10	10	16	21	16	30	24	32	32	37	5
	Males	180	19	19	11	16	20	11	12	14	13	15	20	10	..	19	2	2	4	4	4	5	4	5	9	13	8	17	12	22	24	23	3
	Females	143	18	13	11	14	6	13	8	17	11	15	4	12	1	22	2	6	5	5	3	7	6	5	7	8	8	13	12	10	8	14	2
Houghton	Total	552	44	22	47	41	46	35	44	90	58	51	30	42	2	354	28	12	10	25	16	19	9	11	10	9	4	9	11	7	6	4	8
	Males	318	23	10	25	22	28	20	28	57	34	30	16	23	2	208	15	6	6	12	4	11	6	7	8	4	3	6	7	4	5	2	4
	Females	234	21	12	22	19	18	15	16	33	24	21	14	19	..	146	13	6	4	13	12	8	3	4	2	5	1	3	4	3	1	2	4
Huron	Total	225	16	13	25	17	15	13	25	17	19	23	13	28	1	96	3	2	12	12	9	11	5	8	6	8	6	7	3	11	7	15	1
	Males	130	10	10	14	9	8	3	14	14	11	15	7	14	1	61	2	1	5	8	6	4	2	4	4	4	4	1	6	4	7	7	1
	Females	94	6	3	11	8	7	10	11	3	8	8	6	13	..	34	1	1	7	4	3	7	3	4	2	4	2	6	....	7	..	8	..
	Unknown	1	....	....	....	....	....	....	....	....	....	....	....	1	..	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

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Table 54. CONTINUED.—*Deaths by counties, by sex, by months, and by ages, 1892.*

Counties.	Sex.	Year, 1892.	Months, 1892.												Ages in periods of years, 1892.																
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.
Kalkaska	Total	48	1	5	9	2	5	1	6	4	4	4	2	5	10	1	1	3	7	2	....	2	2	1	2	2	2	1	3	3	3	3
	Males	19	....	2	3	1	2	....	4	1	1	2	1	2	5	1	....	2	2	....	....	....	1	....	....	....	1	1	1	3	2	..
	Females	29	1	3	6	1	3	1	2	3	3	2	1	3	5	....	1	1	5	2	....	2	1	1	2	2	1	....	2	....	1	3
Kent	Total	1,321	154	96	92	138	88	88	120	123	119	106	79	118	457	65	30	54	55	54	43	47	38	49	46	55	55	67	72	51	65	18
	Males	710	91	44	50	67	47	42	65	73	66	58	44	63	263	37	13	26	28	26	15	24	18	19	26	30	26	38	41	35	34	11
	Females	609	62	52	42	71	41	46	54	50	53	48	35	55	192	28	17	28	27	28	28	23	20	30	20	25	29	29	31	16	31	7
	Unknown	2	1	....	....	....	....	....	1	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..
Keweenaw	Total	52	7	4	7	4	2	2	1	11	9	2	2	1	24	3	1	5	....	2	3	....	3	....	....	3	1	2	2	1	2	..
	Males	26	4	2	3	3	....	1	....	5	5	2	1	....	11	....	....	2	....	1	1	....	2	....	....	2	1	2	1	1	2	..
	Females	26	3	2	4	1	2	1	1	6	4	....	1	1	13	3	1	3	....	1	2	....	1	....	....	1	....	....	1	....	....	..
Lake	Total	28	2	1	1	7	1	1	1	....	2	3	6	3	9	2	2	2	....	....	....	....	....	2	....	....	2	2	2	1	4	..
	Males	17	2	1	1	3	....	....	....	....	2	1	4	3	5	1	1	1	....	....	....	....	....	1	....	....	....	2	1	1	4	..
	Females	11	....	....	....	4	1	1	1	....	....	2	2	....	4	1	1	1	....	....	....	....	....	1	....	....	2	....	1	....	....	..
Lapeer	Total	197	15	15	14	13	17	26	15	14	14	16	18	20	45	4	5	8	12	7	3	10	9	4	8	5	7	10	12	14	26	8
	Males	102	9	6	6	6	6	14	10	7	6	9	9	14	25	2	3	4	6	1	....	4	2	3	6	4	5	6	7	9	12	3
	Females	94	6	8	8	7	11	12	5	7	8	7	9	6	20	2	2	4	6	6	3	6	7	1	2	1	2	4	5	5	14	4
	Unknown	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1
Leelanau	Total	52	6	7	8	6	4	1	1	6	3	3	2	5	19	1	....	1	2	1	2	....	1	2	2	1	3	5	4	2	5	1
	Males	27	3	3	3	4	2	1	....	3	1	2	2	3	11	1	....	1	1	....	1	....	1	1	1	....	1	3	1	....	4	..
	Females	25	3	4	5	2	2	....	1	3	2	1	....	2	8	....	....	....	1	1	1	....	....	1	1	1	2	2	3	2	1	1

Lenawee	Total	412	48	24	30	32	32	27	25	30	34	38	44	45	3	50	11	3	11	16	16	9	12	7	13	23	37	26	28	44	48	51	7
	Males	218	27	10	14	18	17	14	13	12	15	18	34	24	2	32	6	1	2	5	7	2	2	4	7	13	23	13	14	26	28	29	4
	Females	194	21	14	16	14	15	13	12	18	19	20	10	21	1	18	5	2	9	11	9	7	10	3	6	10	14	13	14	18	20	22	3
Livingston	Total	166	26	15	17	13	15	9	7	18	12	12	8	13	1	22	5	4	5	8	5	2	3	6	9	5	12	13	14	17	17	18	1
	Males	90	16	10	8	6	9	5	5	8	6	7	3	7	..	10	1	2	2	3	2	1	1	....	5	5	7	7	9	12	12	11	..
	Females	76	10	5	9	7	6	4	2	10	6	5	5	6	1	12	4	2	3	5	3	1	2	6	4	..	5	6	5	5	5	7	1
Luce	Total	24	2	1	1	3	2	2	1	3	1	1	3	3	1	16	1	1	..	....	1	....	1	....	1	..	....	1	..	1	....	..	1
	Males	13	....	..	1	2	....	1	..	2	1	1	3	1	1	7	..	1	..	....	....	....	1	....	1	..	....	1	..	1	....	..	1
	Females	11	2	1	....	1	2	1	1	1	..	....	..	2	..	9	1	..	..	..	1	....	....	....	....	....	....	....	....	....	....	....	..
Mackinac	Total	43	4	3	1	2	5	....	1	3	8	4	5	4	3	19	7	1	2	2	4	1	....	2	1	..	....	1	1	....	1	1	..
	Males	20	1	1	1	1	4	....	..	1	4	....	3	3	1	11	2	..	1	1	1	....	....	2	....	..	....	1	1	....	....	....	..
	Females	23	3	2	....	1	1	....	1	2	4	4	2	1	2	8	5	1	1	1	3	1	....	....	1	..	....	....	..	....	1	1	..
Macomb	Total	335	31	25	30	32	21	29	22	28	24	24	27	42	..	84	19	11	11	10	11	11	8	7	12	11	16	15	16	28	19	45	1
	Males	197	16	13	18	21	12	17	15	16	16	11	21	21	..	56	14	5	4	4	4	6	2	5	7	5	9	12	10	17	9	27	1
	Females	138	15	12	12	11	9	12	7	12	8	13	6	21	..	28	5	6	7	6	7	5	6	2	5	6	7	3	6	11	10	18	..
Manistee	Total	204	15	19	11	22	14	14	21	19	18	18	20	13	..	101	6	5	8	2	5	10	5	6	11	5	5	4	5	4	1	6	15
	Males	121	11	10	7	13	8	8	17	10	11	9	9	8	..	61	3	4	5	1	3	3	3	2	7	5	4	1	2	4	1	4	8
	Females	83	4	9	4	9	6	6	4	9	7	9	11	5	..	40	3	1	3	1	2	7	2	4	4	....	1	3	3	....	....	2	7
Manitou	Total	2	....	1	....	....	1	....	..	....	....	....	....	....	..	1	....	..	..	....	....	....	....	....	....	....	1	....	..	....	....	....	..
	Males	1	....	..	....	....	1	....	..	....	....	....	....	....	..	....	....	..	..	....	....	....	....	....	....	....	1	....	..	....	....	....	..
	Females	1	....	1	....	....	....	....	..	....	....	....	....	....	..	1	..	..	..	....	....	....	....	....	....	....	....	....	....	....	....	....	..
Marquette	Total	574	41	49	64	51	58	45	49	60	48	34	29	46	..	318	30	7	22	24	26	32	22	9	15	8	12	14	13	7	4	7	4
	Males	346	26	31	33	32	33	26	38	31	31	18	19	28	..	180	14	6	9	16	20	22	19	6	12	4	6	9	8	6	3	3	3
	Females	228	15	18	31	19	25	19	11	29	17	16	10	18	..	138	16	1	13	8	6	10	3	3	3	4	6	5	5	1	1	4	1
Mason	Total	151	9	9	13	14	14	10	13	12	13	20	16	8	..	65	3	6	6	4	9	4	6	4	3	6	9	4	4	4	3	7	4
	Males	93	6	7	10	9	10	7	5	9	7	14	7	2	..	47	2	3	4	....	5	3	4	1	2	5	7	1	2	1	1	3	2
	Females	58	3	2	3	5	4	3	8	3	6	6	9	6	..	18	1	3	2	4	4	1	2	3	1	1	2	3	2	3	2	4	2

Table 54.—CONTINUED.—*Deaths by counties, by sex, by months, and by ages, 1892.*

Counties.	Sex.	Year, 1892.	Months, 1892.												Ages in periods of years, 1892.																		
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.
Mecosta	Total	126	8	15	2	10	11	18	8	9	13	9	11	12	..	49	1	6	2	5	5	3	7	5	2	4	6	9	8	5	6	2	1
	Males	74	6	11	2	7	8	12	2	4	6	4	6	6	..	31	1	4	1	3	5	---	3	3	1	2	3	5	3	2	6	..	1
	Females	52	2	4	---	3	3	6	6	5	7	5	5	6	..	18	---	2	1	2	---	3	4	2	1	2	3	4	5	3	..	2	..
Menominee	Total	174	15	9	17	17	15	15	6	19	18	17	14	12	..	116	10	1	5	5	4	4	1	3	2	9	1	4	2	2	1	..	4
	Males	99	9	5	9	10	12	8	4	12	8	8	7	7	..	62	7	---	5	---	3	1	1	1	2	6	1	3	2	2	1	..	2
	Females	73	6	4	7	7	3	7	2	7	10	8	7	5	..	52	3	1	---	5	1	3	---	2	---	3	---	1	---	---	---	---	2
	Unknown	2	---	---	1	---	---	---	---	---	---	1	---	---	..	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Midland	Total	89	3	2	7	10	11	4	8	10	8	5	11	10	..	33	4	5	4	7	3	---	5	5	3	2	2	4	1	6	4	1	..
	Males	44	1	1	2	1	6	4	3	5	5	4	6	6	..	15	1	4	1	6	2	---	3	2	---	2	---	2	1	3	2	..	..
	Females	45	2	1	5	9	5	..	5	5	3	1	5	4	..	18	3	1	3	1	1	---	2	3	3	---	2	2	---	3	2	1	..
Missaukee	Total	47	1	2	2	3	5	3	3	2	7	4	8	7	..	28	2	1	---	1	3	4	1	2	1	---	2	1	---	---	---	---	1
	Males	26	..	1	---	1	3	2	1	2	6	2	5	3	..	16	1	---	---	1	1	3	---	2	---	---	1	1	---	---	---	---	..
	Females	21	1	1	2	2	2	1	2	..	1	2	3	4	..	12	1	1	---	---	2	1	1	---	1	---	1	---	---	---	---	---	1
Monroe	Total	296	30	31	19	23	15	23	25	22	27	27	30	33	1	74	26	12	14	10	15	11	12	9	9	14	7	18	12	7	15	29	2
	Males	151	12	15	7	12	5	11	15	10	15	13	18	17	1	36	12	4	9	4	10	3	5	3	3	9	5	9	9	3	10	16	1
	Females	145	18	16	12	11	10	12	10	12	12	14	12	6	..	38	14	8	5	6	5	8	7	6	6	5	2	9	3	4	5	13	1
Montcalm	Total	241	22	24	21	25	15	21	16	21	15	24	17	19	1	53	8	4	17	12	12	10	4	6	6	12	12	23	12	17	7	15	11
	Males	134	12	15	8	11	8	16	7	10	8	17	12	10	..	31	6	2	7	4	3	3	---	5	3	4	7	13	12	15	5	10	4
	Females	107	10	9	13	14	7	5	9	11	7	7	5	9	1	22	2	2	10	8	9	7	4	1	3	8	5	10	---	2	2	5	7
Montmorency	Total	6	1	---	---	1	---	---	1	1	---	1	1	---	---	2	---	1	---	---	1	---	---	---	1	---	1	---	---	---	---	---	---
	Males	4	1	---	---	1	---	---	1	---	---	---	1	---	---	2	---	1	---	---	---	---	---	---	1	---	---	---	---	---	---	---	---
	Females	2	---	---	---	---	---	---	---	1	---	1	---	---	---	---	---	---	---	---	1	---	---	---	---	---	1	---	---	---	---	---	---

Muskegon	Total	449	38	34	29	51	35	32	35	43	33	37	40	42		169	26	11	16	24	14	19	19	14	14	14	27	15	16	17	9	10	4		
	Males	225	21	19	17	22	15	15	18	27	16	17	18	30		84	18	1	10	8	4	8	10	11	8	8	16	6	13	9	3	6	2		
	Females	217	17	14	11	28	19	14	17	16	17	20	22	22		78	18	10	6	16	10	11	9	3	6	6	11	10	3	3	6	4	2		
	Unknown	7		1	1	1	1	3								7																			
Newaygo	Total	116	14	9	12	14	10	7	6	15	2	10	7	10		37	6	2	11	10	3		4	3	3	4	3	6	10	5	1	8			
	Males	63	8	4	7	4	6	5	5	6	1	5	3	9		20	3	2	6	5	3		2	2	1	1	2	2	5	3		6			
	Females	53	6	5	5	10	4	2	1	9	1	5	4	1		17	3		5	5			2	1	2	3	1	4	5	2	1	2			
Oakland	Total	445	67	48	31	46	25	26	30	29	37	26	43	40	1	50	8	8	10	16	14	18	16	18	22	23	26	27	28	53	40	57	9		
	Males	248	33	26	23	26	9	13	15	17	21	14	26	25		31	3	3	6	7	4	12	10	12	13	13	16	13	14	30	26	30	2		
	Females	197	34	22	8	20	16	13	11	12	16	12	17	15	1	16	5	5	4	9	10	6	6	6	9	10	12	14	14	23	14	27	7		
Oceana	Total	87	3	7	6	11	7	5	7	8	8	9	9	6		29	3	1	3	3	6	1	2	1	4	7	2	2	4	4	4	10	1		
	Males	49	2	5	4	8	3	3	4	4	4	3	5	4		16	1		2		5			1	3	3	2	2	4	1	2	6	1		
	Females	38	1	2	2	3	4	2	3	4	4	6	4	2		13	2	1	1	3	1	1	2		1	4				3	2	4			
Ogemaw	Total	32	6	4	5	2	2	2	2	1		2	2	4		11			2		2	2		2	1	1	2		1		3	2			
	Males	25	4	4	5	2	1	1	2	1		1	1	3		13			2		1	1		1		1	2		1		2	1			
	Females	7	2				1	1				1	1	1		1					1	1		1	1						1	1			
Ontonagon	Total	20			1	1	2		3	1	1	3	3	2		9				1	2	1							2		2	3			
	Males	9				2	2		1		1	1	2			5				1									2		1				
	Females	11			1	2			2	1		2	1	2		4					2	1									1	3			
Osceola	Total	101	9	10	9	7	11	7	4	9	9	5	12	9		31	5		2	2	7	4	2	3	7	4	5	3	6	6	3	7	1		
	Males	56	9	4	6	4	5	4	2	3	5	1	5	3		17	1		1	1	2	3	1	1	2	4	5	1	4	5	2	5	1		
	Females	45		6	3	3	6	3	2	1	4	4	7	6		17	4		1	1	5	1	1	2	5			2	2	1	1	2			
Oscoda	Total	12		1					3		1	3	1	3		4		1	2	1	1		2					1							
	Males	5							2		1		1	1		3							1					1							
	Females	7		1					1			3		2		1		1	2	1	1		1												
Otsego	Total	33	2	1	1		5	5	5	1	5	5	1	2		14	3	2	1	2		1		2	1	1		1	2			1	2		
	Males	18	1				2	2	4		2	4	1	2		4	2	2	1	1				1	1	1		1	1			1	2		
	Females	15	1	1	1		3	3	1	1	3	1				10	1			1		1		1					1					

Table 54.—CONTINUED.—*Deaths by counties, by sex, by months, and by ages, 1892.*

Counties.	Sex.	Year, 1892.	Months, 1892.												Ages in periods of years, 1892.																	
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.
Ottawa	Total	351	60	37	36	25	19	16	25	16	34	29	28	23	3	113	12	7	8	12	15	10	15	11	9	11	12	12	28	17	28	25	6
	Males	173	29	16	14	10	9	10	11	11	20	18	15	9	1	67	3	4	5	5	5	6	4	6	2	8	4	4	15	5	15	12	3
	Females	174	31	21	22	15	10	6	13	5	13	11	12	14	1	43	9	3	3	7	10	4	11	5	7	3	8	8	13	12	13	13	2
	Unknown	4	---	---	---	---	---	---	1	---	1	---	1	---	1	3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1
Presque Isle	Total	32	---	2	---	1	8	2	3	6	2	2	1	5	--	15	2	---	2	1	---	---	2	1	---	1	1	2	1	1	1	2	--
	Males	13	---	1	---	---	3	1	2	1	2	1	---	2	--	5	1	---	1	1	---	---	---	---	---	1	---	1	1	---	1	1	--
	Females	19	---	1	---	1	5	1	1	5	---	1	1	3	--	10	1	---	1	---	---	---	2	1	---	---	1	1	---	1	--	1	--
Roscommon	Total	13	---	---	---	---	2	1	1	2	5	1	---	1	--	7	1	---	---	1	---	2	---	---	---	---	---	---	1	1	--	---	--
	Males	9	---	---	---	---	1	1	1	---	5	---	---	1	--	4	1	---	---	---	---	2	---	---	---	---	---	---	1	1	--	---	--
	Females	4	---	---	---	---	1	---	---	2	---	1	---	---	--	3	---	---	---	1	---	---	---	---	---	---	---	---	---	---	---	---	---	--
Saginaw	Total	1,087	155	92	88	83	79	70	75	105	79	78	107	76	--	405	53	28	48	51	48	36	30	32	33	42	39	51	43	54	36	54	4
	Males	571	82	58	55	41	38	33	42	52	40	43	51	36	--	223	31	16	18	22	24	20	19	16	18	25	23	24	13	32	15	28	4
	Females	515	73	34	33	42	41	37	33	53	38	35	56	40	--	181	22	12	30	29	24	16	11	16	15	17	16	27	30	22	21	26	--
	Unknown	1	---	---	---	---	---	---	---	---	1	---	---	---	--	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--
Sanilac	Total	287	23	24	19	27	21	25	22	18	17	29	25	37	--	91	8	13	12	18	12	13	14	11	11	5	14	8	11	17	13	14	2
	Males	137	11	12	8	16	11	11	10	5	4	18	14	17	--	50	4	4	4	6	6	5	6	1	4	4	9	4	8	11	6	4	1
	Females	148	11	12	11	11	10	14	12	12	13	11	11	20	--	39	4	9	8	12	6	8	8	10	7	1	5	4	3	6	7	10	1
	Unknown	2	1	---	---	---	---	---	---	1	---	---	---	---	--	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--
Schoolcraft	Total	46	5	4	1	5	4	2	1	4	8	2	6	4	--	22	1	---	1	5	4	1	2	2	4	---	---	---	1	1	2	---	--
	Males	27	2	3	---	4	---	2	---	2	3	1	4	4	--	11	1	---	---	3	2	1	2	1	3	---	---	---	---	1	2	---	--
	Females	19	3	1	1	1	4	---	1	2	3	1	2	---	--	11	---	---	1	2	2	---	---	1	1	---	---	---	1	---	---	---	---	--

Shiawassee	Total	184	15	20	13	12	12	12	15	13	17	22	16	17	..	43	6	7	4	9	13	8	8	6	10	9	5	14	11	11	4	11	5
	Males	104	7	10	9	10	9	9	8	7	9	5	12	9	..	30	2	2	2	7	6	5	4	3	5	3	2	10	5	7	4	6	1
	Females	80	8	10	4	2	3	3	7	6	8	17	4	8	..	13	4	5	2	2	7	3	4	3	5	6	3	4	6	4	..	5	4
St. Clair	Total	575	52	44	46	39	50	37	45	66	56	59	47	34	..	158	38	19	30	37	35	28	15	17	21	17	19	21	32	23	21	38	11
	Males	297	35	19	26	18	24	23	27	37	27	28	19	14	..	83	17	10	13	22	10	14	6	11	7	11	10	12	18	15	12	21	5
	Females	278	17	25	20	21	26	14	18	29	29	31	28	20	..	75	16	9	17	15	25	14	9	6	14	6	9	9	14	8	9	17	6
St. Joseph	Total	315	48	32	25	28	21	25	15	30	21	26	23	21	..	52	1	5	9	11	9	13	12	5	9	14	21	19	31	31	38	34	1
	Males	145	25	15	12	13	6	13	10	12	10	13	5	11	..	24	1	3	4	7	4	6	7	1	2	7	7	6	21	15	17	13	..
	Females	170	23	17	13	15	15	12	5	18	11	13	18	10	..	28	....	2	5	4	5	7	5	4	7	7	14	13	10	16	21	21	1
Tuscola	Total	219	14	9	27	13	15	11	22	14	19	23	25	24	3	59	5	4	8	14	12	5	9	9	10	4	6	11	9	16	13	12	13
	Males	107	6	4	14	9	6	6	7	6	7	13	13	14	2	32	5	3	2	7	2	1	2	4	4	....	4	5	6	10	8	8	4
	Females	108	8	5	13	4	9	4	15	8	11	10	11	9	1	27	....	1	6	7	10	4	7	5	6	4	2	6	3	6	5	4	5
	Unknown	4	....	....	....	....	....	1	....	....	1	....	1	1	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4
Van Buren	Total	296	38	17	30	22	19	22	18	17	20	31	17	35	..	77	2	4	7	8	16	8	10	9	10	10	12	23	20	18	24	25	3
	Males	155	16	11	16	13	11	10	12	9	13	14	10	20	..	39	2	3	2	4	7	4	5	3	5	5	6	13	15	9	13	15	..
	Females	128	21	6	13	9	8	12	6	8	7	17	7	14	..	35	....	1	5	4	9	4	5	6	5	5	6	10	5	9	6	10	3
	Unknown	3	1	....	1	....	....	....	....	....	....	....	....	1	..	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Washtenaw	Total	436	69	40	38	41	40	23	24	20	22	40	32	45	2	66	16	12	13	14	16	22	12	14	17	14	23	34	31	39	36	50	7
	Males	233	28	23	20	20	22	11	13	13	16	21	19	26	1	47	11	5	8	2	8	8	5	7	9	7	12	17	19	21	19	24	4
	Females	202	40	17	18	21	18	12	11	7	6	19	13	19	1	18	5	7	5	12	8	14	7	7	8	7	11	17	12	18	17	26	3
	Unknown	1	1	....	....	....	....	....	....	....	....	....	....	....	..	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..
Wayne	Total	3,722	306	263	307	340	330	281	393	348	254	277	292	328	3	1602	258	87	114	164	166	154	131	99	112	97	109	124	147	125	96	113	24
	Males	2,067	163	134	182	186	182	174	215	198	144	149	167	176	2	891	138	45	60	87	96	87	66	53	70	54	76	72	88	71	50	51	17
	Females	1,647	143	129	125	152	148	106	177	154	108	128	125	151	1	703	120	42	54	77	70	67	65	46	42	43	33	52	64	54	46	62	7
	Unknown	8	....	....	....	2	....	1	1	1	2	....	....	1	..	8	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..
Wexford	Total	91	11	5	5	3	2	9	7	13	10	10	7	8	1	46	1	1	4	2	2	4	2	2	3	1	6	8	2	2	1	3	1
	Males	57	7	2	3	1	1	5	5	9	8	7	3	5	1	27	1	1	2	1	1	3	1	1	3	1	3	5	1	2	1	2	1
	Females	34	4	3	2	2	1	4	2	4	2	3	4	3	..	19	....	....	2	1	1	1	1	1	....	....	3	3	1	....	..	1	..

Table 55.—*Exhibiting, by sex and by age, in periods of years, the number of persons returned as having died in Michigan during the year 1892. (Still-births included.)*

Ages in periods of years.	Sex.	Year, 1892.	Months, 1892.											
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
All ages	Total	21,729	2,152	1,687	1,784	1,879	1,700	1,481	1,678	1,942	1,802	1,892	1,788	1,949	45
	Males	11,837	1,148	906	944	997	909	817	962	1,059	999	1,033	990	1,051	22
	Females	9,809	990	777	786	873	788	657	710	879	797	854	785	891	22
	Unknown	83	14	4	4	9	3	7	6	4	6	5	13	7	1
Still-births	Total	1,014	82	74	90	86	83	85	82	95	72	72	79	113	1
	Males	597	43	42	51	56	46	48	52	62	44	46	44	63	---
	Females	374	36	30	36	27	35	32	28	29	23	24	28	46	---
	Unknown	43	3	2	3	3	2	5	2	4	5	2	7	4	1
Under 1 *	Total	4,090	304	261	303	306	289	236	369	565	458	358	311	325	5
	Males	2,321	176	152	173	171	163	148	213	306	267	198	176	176	2
	Females	1,760	126	109	129	133	126	88	154	259	191	159	134	149	3
	Unknown	9	2	------	1	2	--- --	------	2	------	------	1	1	------	---
Under 5 *	Total	6,281	486	418	479	525	471	377	550	771	659	530	483	521	11
	Males	3,499	267	229	281	277	247	236	314	409	376	298	274	286	5
	Females	2,772	216	189	197	246	224	141	234	362	283	231	208	235	6
	Unknown	10	3	------	1	2	------	------	2	------	------	1	1	------	---
Under 1 †	*Total*	*5,104*	*386*	*335*	*393*	*392*	*372*	*321*	*451*	*660*	*530*	*430*	*390*	*438*	*6*
	Males	*2,918*	*219*	*194*	*224*	*227*	*209*	*196*	*265*	*368*	*311*	*244*	*220*	*239*	*2*
	Females	*2,134*	*162*	*139*	*165*	*160*	*161*	*120*	*182*	*288*	*214*	*183*	*162*	*195*	*3*
	Unknown	*52*	*5*	*2*	*4*	*5*	*2*	*5*	*4*	*4*	*5*	*3*	*8*	*4*	*1*
Under 5 †	*Total*	*7,295*	*568*	*492*	*569*	*611*	*554*	*462*	*632*	*866*	*731*	*602*	*562*	*634*	*12*
	Males	*4,096*	*310*	*271*	*332*	*333*	*293*	*284*	*366*	*471*	*420*	*344*	*318*	*349*	*5*
	Females	*3,146*	*252*	*219*	*233*	*273*	*259*	*173*	*262*	*391*	*306*	*255*	*236*	*281*	*6*
	Unknown	*53*	*6*	*2*	*4*	*5*	*2*	*5*	*4*	*4*	*5*	*3*	*8*	*4*	*1*
5 to 10	Total	967	55	60	74	97	81	81	62	64	87	94	103	105	4
	Males	532	25	23	37	49	53	47	33	37	53	59	61	53	2
	Females	435	30	37	37	48	28	34	29	27	34	35	42	52	2
10 to 15	Total	526	27	35	42	47	50	27	43	43	40	55	63	54	---
	Males	270	12	17	21	24	24	18	24	23	22	25	29	31	---
	Females	256	15	18	21	23	26	9	19	20	18	30	34	23	---
15 to 20	Total	770	49	57	62	64	88	68	65	69	60	72	56	57	3
	Males	367	21	31	22	29	43	24	29	33	39	36	29	29	2
	Females	403	28	26	40	35	45	44	36	36	21	36	27	28	1

* Still-births not included. † Still-births included.

Table 55.—CONTINUED.—*Deaths by periods of age, sex and months.*

Ages in periods of years.	Sex.	Year, 1892.	Months, 1892.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
20 to 25	Total	949	70	51	92	90	66	81	65	86	83	95	73	97	....
	Males	466	36	28	36	42	31	40	26	39	45	46	38	49	....
	Females	483	34	23	56	48	35	41	29	47	38	49	35	48	....
25 to 30	Total	890	82	65	84	71	68	64	92	61	67	87	73	76	....
	Males	413	38	26	42	29	33	31	42	28	29	41	40	34	....
	Females	477	44	39	42	42	35	33	50	33	38	46	33	42	....
30 to 35	Total	808	71	65	74	71	64	56	64	62	63	79	62	75	2
	Males	407	35	24	38	37	28	22	38	30	33	44	35	42	1
	Females	401	36	41	36	34	36	34	26	32	30	35	27	33	1
35 to 40	Total	725	85	51	59	58	62	46	35	52	63	81	66	66	1
	Males	356	44	25	30	18	32	20	21	30	28	43	32	33	....
	Females	369	41	26	29	40	30	26	14	22	35	38	34	33	1
40 to 45	Total	628	62	60	46	46	51	54	57	51	39	51	49	62	....
	Males	314	31	30	27	22	27	18	38	24	20	27	25	25	....
	Females	314	31	30	19	24	24	36	19	27	19	24	24	37	....
45 to 50	Total	723	66	65	57	63	70	49	55	57	47	57	72	65	....
	Males	393	34	36	36	38	38	30	31	32	27	24	34	33	....
	Females	330	32	29	21	25	32	19	24	25	20	23	38	32	....
50 to 55	Total	726	89	71	56	55	60	50	53	54	44	65	62	65	2
	Males	415	52	39	33	35	34	29	36	24	29	37	31	35	1
	Females	311	37	32	23	20	26	21	17	30	15	28	31	30	1
55 to 60	Total	819	105	79	70	76	55	51	57	61	62	72	65	66	....
	Males	471	60	44	43	49	31	29	29	36	32	37	41	40	....
	Females	348	45	35	27	27	24	23	28	25	30	35	24	26	....
60 to 65	Total	942	118	80	84	75	71	64	62	76	65	79	82	84	2
	Males	510	58	44	42	42	36	41	33	49	34	37	47	45	2
	Females	432	60	36	42	33	35	23	29	27	31	42	35	39	....
65 to 70	Total	1,074	150	100	79	106	93	88	66	68	86	70	87	80	1
	Males	604	76	60	46	61	50	41	48	43	52	35	50	42	....
	Females	470	74	40	33	45	43	47	18	25	34	35	37	38	1
70 to 75	Total	1,126	140	112	84	91	82	80	84	86	88	85	91	101	2
	Males	658	78	78	44	53	54	51	49	50	42	48	51	59	1
	Females	468	62	34	40	38	28	29	35	36	46	37	40	42	1
75 to 80	Total	1,006	149	102	76	101	71	52	66	63	62	92	82	90	....
	Males	592	86	49	41	60	43	32	35	40	33	63	51	59	....
	Females	414	63	53	35	41	28	20	31	23	29	29	31	31	....

Table 55.—CONCLUDED.—*Deaths by periods of age, sex and months.*

Ages in periods of years.	Sex.	Year, 1892.	Months, 1892.											
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
80 to 85	Total	779	118	68	72	66	45	51	62	50	54	51	55	86	1
	Males	441	75	36	41	33	20	24	38	28	29	34	33	49	1
	Females	338	43	32	31	33	25	27	24	22	25	17	22	37	....
85 to 90	Total	379	69	33	23	30	26	21	23	27	22	35	31	39	....
	Males	205	37	17	11	15	13	15	15	16	12	14	19	21	....
	Females	174	32	16	12	15	13	6	8	11	10	21	12	18	....
90 to 95	Total	140	22	11	14	12	11	6	4	10	5	17	15	12	1
	Males	76	12	8	10	5	7	3	3	3	3	7	6	8	1
	Females	64	10	3	4	7	4	3	1	7	2	10	9	4	....
95 to 100	Total	28	7	1	2	2	2	3	1	1	1	2	2	3	1
	Males	10	2	1	1	1	....	1	1	1	....	....	2	....	....
	Females	18	5	....	1	1	2	2	....	....	1	2	....	3	1
100 and over	Total	4	....	....	....	....	....	....	....	....	1	2	1	....	....
	Males	.....	....	....	....	....	....	....	....	....	....	....	....	....	....
	Females	4	....	....	....	....	....	....	....	....	1	2	1	....	....
Unknown	Total	425	50	29	15	47	30	27	30	35	32	49	36	32	13
	Males	241	26	19	11	22	19	17	17	22	17	32	18	15	6
	Females	154	16	8	4	21	10	8	11	13	14	15	13	14	7
	Unknown	30	8	2	....	4	1	2	2	....	1	2	5	3	....

Tables 55 and 56 give the facts in detail in regard to the number of persons of each sex who died at all ages during each month of the year 1892. Table 55 is condensed from Table 56, and states the ages in periods of five years. Table 56 gives the number for each year separately, and also the number of deaths at each month of age for children dying under the age of one year. These tables as printed in the present report differ from those previously published in that the number of still-births is separately stated, and the number of deaths under one year of age, and also under five years of age, are stated both inclusive and exclusive of still-births. The former statement is made in order that the data may be readily comparable with former reports; the latter, because for many purposes it is important to eliminate still-births, as, when included, they unduly increase the number of deaths for the first month and for the first year of age as compared with those of subsequent years. The death-rates of children born alive are the important points of consideration in discussing infant mortality; their variations at different ages serve not only to mark the dangerous periods of development, but suggest the necessity of special study of the management of infants and the treatment of the diseases to which they are especially liable at those ages, and thus may bring about a marked lowering of this special class of mortality. The introduction of still-births into this class of deaths adds a large number of deaths dependent on entirely different causes for the most part, and not subject to amelioration by the same sanitary and therapeutic measures.

Table 56.—*Exhibiting, by sex and by months, the number returned as having died in Michigan during the year 1892 at each and every age, the age stated in twelfths of a year for those under one year, and in years for those over one year of age. (Still-births included.)*

Ages in years.	Sex.	Year, 1892.	Months, 1892.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
All ages	Total	21,729	2,152	1,687	1,734	1,879	1,700	1,481	1,678	1,942	1,802	1,892	1,788	1,949	45
	Males	11,837	1,148	906	944	997	909	817	962	1,059	999	1,033	990	1,051	22
	Females	9,809	990	777	786	873	788	657	710	879	797	854	785	891	22
	Unknown	83	14	4	4	9	3	7	6	4	6	5	13	7	1
Still-births	Total	1,014	82	74	90	86	83	85	82	95	72	72	79	113	1
	Males	597	43	42	51	56	46	48	52	62	44	46	44	63	----
	Females	374	36	30	36	27	35	32	28	29	23	24	28	46	----
	Unknown	43	3	2	3	3	2	5	2	4	5	2	7	4	1
Under 1-12*	Total	1,342	113	96	129	105	108	97	92	134	118	108	108	131	3
	Males	789	67	62	68	61	61	64	61	83	76	58	59	73	2
	Females	547	45	34	61	43	47	33	29	51	48	49	48	58	1
	Unknown	6	1	----	----	1	----	----	2	----	----	1	1	----	----
Under 1-12†	*Total*	*2,356*	*195*	*170*	*219*	*191*	*191*	*182*	*174*	*229*	*190*	*180*	*187*	*244*	*4*
	Males	*1,386*	*110*	*104*	*119*	*117*	*107*	*112*	*113*	*145*	*114*	*104*	*103*	*136*	*3*
	Females	*921*	*81*	*64*	*97*	*70*	*82*	*65*	*57*	*80*	*71*	*73*	*76*	*104*	*1*
	Unknown	*49*	*4*	*2*	*3*	*4*	*2*	*5*	*4*	*4*	*5*	*3*	*8*	*4*	*1*
1-12	Total	426	29	23	36	27	35	33	34	41	51	44	41	32	----
	Males	249	18	11	21	16	17	19	24	17	35	24	27	20	----
	Females	176	11	12	15	10	18	14	10	24	16	20	14	12	----
	Unknown	1	----	----	----	1	----	----	----	----	----	----	----	----	----
2-12	Total	365	27	6	24	30	32	21	31	63	40	31	26	34	----
	Males	221	16	4	14	12	23	15	19	39	25	22	15	17	----
	Females	144	11	2	10	18	9	6	12	24	15	9	11	17	----
3-12	Total	343	21	19	14	20	29	14	36	53	48	30	28	31	----
	Males	187	15	12	9	10	17	5	20	21	26	17	20	15	----
	Females	156	6	7	5	10	12	9	16	32	22	13	8	16	----
4-12	Total	273	13	19	22	15	11	10	32	51	33	32	25	10	----
	Males	155	7	14	14	8	5	8	15	27	15	23	14	5	----
	Females	117	6	5	7	7	6	2	17	24	18	9	11	5	----
	Unknown	1	----	----	1	----	----	----	----	----	----	----	----	----	----
5-12	Total	227	23	16	11	13	10	8	27	39	34	18	13	13	2
	Males	134	15	6	8	10	7	7	14	19	25	9	6	8	----
	Females	93	8	10	3	3	3	1	13	20	9	9	7	5	2

* Still-births not included. † Still-births included.

Table 56.—CONTINUED.—*Deaths by ages, sex and months.*

Ages in years.	Sex.	Year, 1892.	Months, 1892.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
6-12	Total	250	16	18	14	14	13	11	32	44	33	19	17	19	....
	Males	138	10	12	10	10	8	8	18	19	18	9	6	10	....
	Females	112	6	6	4	4	5	3	14	25	15	10	11	9	....
7-12	Total	189	13	18	8	13	8	7	18	31	30	15	16	12	....
	Males	104	7	7	6	9	4	4	7	22	16	6	8	8	....
	Females	85	6	11	2	4	4	3	11	9	14	9	8	4	....
8-12	Total	181	16	13	9	20	13	5	18	34	19	12	9	13	....
	Males	83	4	7	3	9	8	2	6	20	9	4	4	7	....
	Females	98	12	6	6	11	5	3	12	14	10	8	5	6	....
9-12	Total	169	10	10	12	23	7	11	21	20	12	21	9	13	....
	Males	88	5	5	6	14	3	6	15	9	6	9	6	4	....
	Females	81	5	5	6	9	4	5	6	11	6	12	3	9	....
10-12	Total	164	13	11	16	12	9	7	16	33	13	13	13	8	....
	Males	89	6	4	10	6	2	3	7	21	8	9	8	5	....
	Females	74	6	7	6	6	7	4	9	12	5	4	5	3	....
	Unknown	1	1	....	....	....	....	....	....	....	....	....	....	....	....
11-12	Total	161	10	12	8	14	14	12	12	22	27	15	6	9	....
	Males	84	6	8	4	6	8	7	7	9	14	8	3	4	....
	Females	77	4	4	4	8	6	5	5	13	13	7	3	5	....
1	Total	1,013	82	67	77	88	78	72	95	114	108	84	72	72	4
	Males	545	41	29	45	45	38	42	51	55	56	55	45	41	2
	Females	467	40	38	32	43	40	30	44	59	52	29	27	31	2
	Unknown	1	1	....	....	....	....	....	....	....	....	....	....	....	....
2	Total	520	42	36	55	61	41	25	38	49	43	44	37	48	1
	Males	290	25	19	36	30	18	14	21	26	23	26	23	29	....
	Females	230	17	17	19	31	23	11	17	23	20	18	14	19	1
3	Total	377	31	31	27	37	38	22	24	21	27	25	42	52	....
	Males	202	17	17	16	16	20	17	15	11	15	10	21	27	....
	Females	175	14	14	11	21	18	5	9	10	12	15	21	25	....
4	Total	281	27	23	17	33	25	22	24	22	23	19	21	24	1
	Males	141	8	12	11	15	8	15	14	11	15	9	9	13	1
	Females	140	19	11	6	18	17	7	10	11	8	10	12	11	....
5	Total	278	17	15	16	33	23	19	14	18	31	30	31	31	....
	Males	164	7	5	9	16	16	14	8	9	19	20	21	20	....
	Females	114	10	10	7	17	7	5	6	9	12	10	10	11	....

Table 56.—CONTINUED.—*Deaths by ages, sex and months.*

Age in years.	Sex.	Year, 1892.	Months, 1892.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
6	Total	212	16	13	19	24	17	22	10	15	14	16	22	21	3
	Males	109	7	4	8	15	12	10	5	8	9	7	12	11	1
	Females	103	9	9	11	9	5	12	5	7	5	9	10	10	2
7	Total	198	11	14	22	17	16	18	15	7	16	20	18	24	....
	Males	101	4	5	12	8	8	10	6	6	7	14	10	11	....
	Females	97	7	9	10	9	8	8	9	1	9	6	8	13	....
8	Total	143	6	8	10	12	14	13	7	11	9	16	14	22	1
	Males	81	3	6	6	5	10	9	4	6	6	10	6	9	1
	Females	62	3	2	4	7	4	4	3	5	3	6	8	13	....
9	Total	136	5	10	7	11	11	9	16	13	17	12	18	7	....
	Males	77	4	3	2	5	7	4	10	8	12	8	12	2	....
	Females	59	1	7	5	6	4	5	6	5	5	4	6	5	....
10	Total	110	8	7	4	9	9	9	6	14	7	15	11	11	....
	Males	56	4	3	3	3	3	7	3	8	4	7	6	5	....
	Females	54	4	4	1	6	6	2	3	6	3	8	5	6	....
11	Total	101	5	5	7	8	10	5	11	6	8	12	12	12	....
	Males	52	2	2	4	4	4	3	7	3	5	6	7	5	....
	Females	49	3	3	3	4	6	2	4	3	3	6	5	7	....
12	Total	105	5	5	14	13	6	6	9	9	10	9	10	9	....
	Males	54	2	5	6	7	3	2	4	6	6	2	5	6	....
	Females	51	3	....	8	6	3	4	5	3	4	7	5	3	....
13	Total	110	4	11	7	6	16	2	12	7	11	11	12	11	....
	Males	58	2	5	2	4	11	2	8	4	5	4	5	6	....
	Females	52	2	6	5	2	5	....	4	3	6	7	7	5	....
14	Total	100	5	7	10	11	9	5	5	7	4	8	18	11	....
	Males	50	2	2	6	6	3	4	2	2	2	6	6	9	....
	Females	50	3	5	4	5	6	1	3	5	2	2	12	2	....
15	Total	98	10	5	13	11	14	7	8	6	6	9	2	7	....
	Males	46	4	3	7	7	4	2	3	3	3	6	2	2	....
	Females	52	6	2	6	4	10	5	5	3	3	3	....	5	....
16	Total	142	6	11	11	12	19	12	14	9	12	12	17	6	1
	Males	57	2	7	3	5	7	3	5	2	6	4	9	4	....
	Females	85	4	4	8	7	12	9	9	7	6	8	8	2	1
17	Total	130	11	11	4	7	17	15	8	12	11	11	13	10	....
	Males	66	6	6	1	1	10	5	6	7	8	7	5	4	....
	Females	64	5	5	3	6	7	10	2	5	3	4	8	6	....

Table 56.—CONTINUED.—*Deaths by ages, sex and months.*

Age in years.	Sex.	Year, 1892.	Months, 1892.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
18	Total	189	10	13	21	16	19	14	21	18	13	17	8	19	....
	Males	85	6	5	5	8	11	5	9	7	8	7	4	10	....
	Females	104	4	8	16	8	8	9	12	11	5	10	4	9	....
19	Total	211	12	17	13	18	19	20	14	24	18	23	16	15	2
	Males	113	3	10	6	8	11	9	6	14	14	12	9	9	2
	Females	98	9	7	7	10	8	11	8	10	4	11	7	6	....
20	Total	174	14	6	24	22	11	16	15	8	12	10	18	18	....
	Males	83	8	3	9	15	5	7	8	1	6	4	8	9	....
	Females	91	6	3	15	7	6	9	7	7	6	6	10	9	....
21	Total	180	11	9	14	18	11	16	15	16	19	15	19	17	....
	Males	85	5	5	6	9	5	9	8	8	9	6	9	6	....
	Females	95	6	4	8	9	6	7	7	8	10	9	10	11	....
22	Total	202	15	15	23	15	12	16	14	20	15	24	12	21	....
	Males	105	7	7	10	5	7	8	8	9	9	14	8	13	....
	Females	97	8	8	13	10	5	8	6	11	6	10	4	8	....
23	Total	192	16	9	18	19	15	15	9	22	20	25	7	17	....
	Males	98	9	6	7	8	7	10	5	10	10	11	4	11	....
	Females	94	7	3	11	11	8	5	4	12	10	14	3	6	....
24	Total	201	14	12	13	16	17	18	12	20	17	21	17	24	....
	Males	95	7	7	4	5	7	6	7	11	11	11	9	10	....
	Females	106	7	5	9	11	10	12	5	9	6	10	8	14	....
25	Total	186	11	17	23	14	18	15	24	7	13	20	9	15	....
	Males	87	6	9	11	3	8	9	13	3	4	10	7	4	....
	Females	99	5	8	12	11	10	6	11	4	9	10	2	11	....
26	Total	177	30	10	17	12	11	13	14	16	10	15	16	13	....
	Males	88	12	1	9	6	8	8	9	11	5	6	8	5	....
	Females	89	18	9	8	6	3	5	5	5	5	9	8	8	....
27	Total	143	10	9	8	15	15	12	12	7	11	13	17	14	....
	Males	61	5	2	4	6	7	6	5	2	4	6	8	6	....
	Females	82	5	7	4	9	8	6	7	5	7	7	9	8	....
28	Total	215	19	14	22	16	12	13	21	13	19	26	18	22	....
	Males	95	10	6	9	6	5	2	9	5	9	10	13	11	....
	Females	120	9	8	13	10	7	11	12	8	10	16	5	11	....
29	Total	169	12	15	14	14	12	11	21	13	14	13	13	12	....
	Males	82	5	8	9	8	5	6	6	7	7	9	4	8	....
	Females	87	7	7	5	6	7	5	15	11	7	4	9	4	....

Table 56.—CONTINUED.—*Deaths by ages, sex and months.*

Ages in years.	Sex.	Year, 1892.	Months, 1892.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
	Total	208	19	11	22	13	23	14	18	15	17	17	10	23	1
30	Males	106	12	4	11	5	11	6	11	5	8	8	6	18	1
	Females	97	7	7	11	8	12	8	7	10	9	9	4	5	....
	Total	127	13	12	13	14	6	8	9	8	8	9	14	13	....
31	Males	56	6	5	5	6	2	2	5	3	3	5	8	6	....
	Females	71	7	7	8	8	4	6	4	5	5	4	6	7	....
	Total	187	14	15	10	21	8	11	17	18	19	24	14	15	1
32	Males	108	8	6	5	16	5	3	10	13	13	11	10	8	....
	Females	79	6	9	5	5	3	8	7	5	6	13	4	7	1
	Total	160	13	17	13	14	16	16	13	10	12	14	11	11	....
33	Males	76	5	4	8	5	8	9	7	4	6	10	5	5	....
	Females	84	8	13	5	9	8	7	6	6	6	4	6	6	....
	Total	131	12	10	16	9	11	7	7	11	7	15	13	13	....
34	Males	61	4	5	9	5	2	2	5	5	3	10	6	5	....
	Females	70	8	5	7	4	9	5	2	6	4	5	7	8	....
	Total	168	22	11	11	15	17	13	10	11	12	19	16	12	....
35	Males	72	11	6	3	5	5	4	6	4	4	10	8	6	....
	Females	96	11	5	8	10	12	8	4	7	8	9	8	6	....
	Total	163	15	13	16	14	15	9	5	12	14	17	16	17	....
36	Males	79	9	7	8	2	8	4	2	9	6	10	6	8	....
	Females	84	6	6	8	12	7	5	3	3	8	7	10	9	....
	Total	126	11	9	12	11	11	6	7	10	7	16	12	14	....
37	Males	71	5	5	5	3	8	4	4	7	5	9	8	8	....
	Females	55	6	4	7	8	3	2	3	3	2	7	4	6	....
	Total	140	23	7	13	11	7	9	8	14	11	12	13	12	....
38	Males	74	10	4	9	5	3	5	5	7	5	8	7	6	....
	Females	66	13	3	4	6	4	4	3	7	6	4	6	6	....
	Total	128	14	11	7	7	12	10	5	5	19	17	9	11	1
39	Males	60	9	3	5	3	8	3	4	3	8	6	3	5	....
	Females	68	5	8	2	4	4	7	1	2	11	11	6	6	1
	Total	146	17	10	7	12	12	19	13	11	5	10	9	21	....
40	Males	73	9	5	6	7	5	6	11	5	4	5	5	5	....
	Females	73	8	5	1	5	7	13	2	6	1	5	4	16	....
	Total	87	10	12	10	6	8	2	5	8	6	5	6	9	....
41	Males	38	4	5	6	1	5	1	1	2	2	3	3	5	....
	Females	49	6	7	4	5	3	1	4	6	4	2	3	4	....

Table 56.—CONTINUED.—*Deaths by ages, sex and months.*

Ages in years.	Sex.	Year 1892.	Months, 1892.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
42	Total	153	13	10	15	11	8	14	14	15	11	15	15	12	....
	Males	89	8	4	7	7	4	6	13	8	7	9	7	9	....
	Females	64	5	6	8	4	4	8	1	7	4	6	8	3	....
43	Total	125	10	19	10	9	11	9	12	7	8	10	10	10	....
	Males	57	5	10	5	3	5	2	6	4	4	5	4	4	....
	Females	68	5	9	5	6	6	7	6	3	4	5	6	6	....
44	Total	117	12	9	4	8	12	10	13	10	9	11	9	10	....
	Males	57	5	6	3	4	8	3	7	5	3	5	6	2	....
	Females	60	7	3	1	4	4	7	6	5	6	6	3	8	....
45	Total	174	13	15	15	13	12	13	16	11	15	11	13	17	....
	Males	86	5	10	12	6	3	9	8	5	7	5	8	8	....
	Females	88	8	5	3	7	9	9	8	6	8	6	10	9	....
46	Total	124	17	12	9	13	15	8	12	9	3	10	8	6	....
	Males	72	9	8	5	9	12	5	5	4	2	3	5	5	....
	Females	52	8	4	4	4	3	3	7	5	1	7	3	3	....
47	Total	125	12	9	12	12	13	6	13	6	10	4	17	12	....
	Males	69	7	4	8	6	9	4	9	4	6	....	9	3	....
	Females	56	5	5	4	6	4	2	3	2	4	4	8	9	....
48	Total	152	12	16	11	13	14	9	8	17	9	15	15	13	....
	Males	81	7	5	7	7	7	6	4	12	5	5	9	7	....
	Females	71	5	11	4	6	7	3	4	5	4	10	6	6	....
49	Total	148	12	13	10	13	16	8	7	14	10	17	14	15	....
	Males	85	6	9	4	10	7	6	5	7	7	11	3	10	....
	Females	63	6	4	6	2	9	2	2	7	3	6	11	5	....
50	Total	165	17	16	12	13	10	13	9	15	6	21	10	16	2
	Males	100	13	9	7	14	4	8	6	7	4	11	5	11	1
	Females	65	4	7	5	4	6	5	3	8	2	10	5	5	1
51	Total	105	14	10	12	7	6	4	6	8	7	11	10	10	....
	Males	60	8	6	8	4	3	2	4	3	5	7	6	4	....
	Females	45	6	4	4	3	3	2	2	5	2	4	4	6	....
52	Total	172	24	18	13	9	18	14	13	9	13	9	19	13	....
	Males	95	12	9	7	5	10	8	8	6	9	5	9	7	....
	Females	77	12	9	6	4	8	6	5	3	4	4	10	6	....
53	Total	141	16	13	10	11	11	9	15	10	5	16	12	13	....
	Males	80	7	7	7	6	7	6	12	5	2	9	6	6	....
	Females	61	9	6	3	5	4	3	3	5	3	7	6	7	....

Table 56.—CONTINUED.—*Deaths by ages, sex and months.*

Age in years.	Sex.	Year 1892.	Months, 1892.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
54	Total	143	18	14	9	10	15	10	10	12	13	8	11	13	....
	Males	80	12	8	4	6	10	5	6	3	9	5	5	7	....
	Females	63	6	6	5	4	5	5	4	9	4	3	6	6	....
55	Total	144	24	12	12	11	12	7	14	7	10	13	5	17	....
	Males	82	15	5	9	6	8	6	9	2	2	8	2	10	....
	Females	62	9	7	3	5	4	1	5	5	8	5	3	7	....
56	Total	168	15	15	23	19	3	14	8	17	16	8	19	11	....
	Males	102	10	9	12	14	1	8	5	9	6	5	14	9	....
	Females	66	5	6	11	5	2	6	3	8	10	3	5	2	....
57	Total	152	20	13	9	18	10	13	7	5	14	13	18	12	....
	Males	86	11	10	5	12	5	5	3	4	9	4	11	7	....
	Females	66	9	3	4	6	5	8	4	1	5	9	7	5	....
58	Total	187	28	19	10	17	19	9	17	16	9	11	15	17	....
	Males	103	14	9	8	8	10	4	8	11	8	5	8	10	....
	Females	84	14	10	2	9	9	5	9	5	1	6	7	7	....
59	Total	168	18	20	16	11	11	8	11	16	13	27	8	9	....
	Males	98	10	11	9	9	7	6	4	10	7	15	6	4	....
	Females	70	8	9	7	2	4	2	7	6	6	12	2	5	....
60	Total	206	18	11	19	15	16	19	15	20	12	23	17	19	2
	Males	109	10	7	7	6	9	13	11	9	6	12	9	8	2
	Females	97	8	4	12	9	7	6	4	11	6	11	8	11	....
61	Total	141	21	14	11	12	8	9	7	9	8	11	15	16	....
	Males	73	10	9	6	6	6	4	5	7	2	3	10	5	....
	Females	68	11	5	5	6	2	5	2	2	6	8	5	11	....
62	Total	212	30	20	20	9	14	12	15	15	20	21	18	18	....
	Males	129	17	9	13	6	9	9	8	12	10	13	10	13	....
	Females	83	13	11	7	3	5	3	7	3	10	8	8	5	....
63	Total	194	21	13	17	27	15	9	11	16	17	11	19	18	....
	Males	108	10	8	6	16	7	7	2	12	12	6	11	11	....
	Females	86	11	5	11	11	8	2	9	4	5	5	8	7	....
64	Total	189	28	22	17	12	13	15	14	16	8	13	13	13	....
	Males	91	11	11	10	8	5	8	7	9	4	3	7	8	....
	Females	98	17	11	7	4	13	7	7	7	4	10	6	5	....
65	Total	266	34	20	22	35	25	17	13	16	20	16	26	22	....
	Males	149	16	11	13	23	9	7	10	12	14	11	13	10	....
	Females	117	13	9	9	12	16	10	3	4	6	5	13	12	....

Table 56.—CONTINUED.—*Deaths by ages, sex and months.*

Ages in years.	Sex.	Year, 1892.	Months, 1892.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
66	Total	203	28	19	12	20	16	20	10	15	17	16	21	8	1
	Males	112	16	11	7	11	5	10	8	9	10	6	14	5	....
	Females	91	12	8	5	9	11	10	2	6	7	10	7	3	1
67	Total	212	33	16	15	26	17	23	11	9	20	9	14	19	....
	Males	110	13	8	10	14	11	10	8	6	14	3	5	8	....
	Females	102	20	8	5	12	6	13	3	3	6	6	9	11	....
68	Total	213	26	24	21	16	18	19	13	14	13	18	13	19	....
	Males	124	14	15	12	7	13	12	10	6	6	8	9	12	....
	Females	89	12	9	9	9	5	7	3	8	6	10	4	7	....
69	Total	180	29	21	9	9	17	9	19	14	17	11	13	12	....
	Males	109	17	15	4	6	12	2	12	10	8	7	9	7	....
	Females	71	12	6	5	3	5	7	7	4	9	4	4	5	....
70	Total	209	25	23	14	17	12	15	17	16	20	16	18	15	1
	Males	137	14	18	10	12	9	11	13	10	11	9	9	10	1
	Females	72	11	5	4	5	3	4	4	6	9	7	9	5	....
71	Total	172	25	21	23	14	11	13	9	20	13	7	8	9	....
	Males	103	13	13	13	8	5	10	5	11	3	4	7	6	....
	Females	69	7	8	10	6	6	3	4	9	9	3	1	3	....
72	Total	307	47	24	17	28	23	23	22	20	21	24	30	27	1
	Males	173	26	14	9	16	19	12	12	11	13	12	14	15	....
	Females	134	21	10	8	12	4	11	10	9	8	12	16	12	1
73	Total	221	24	21	17	12	14	18	19	13	19	20	16	28	....
	Males	119	10	15	6	6	7	11	10	9	7	13	10	15	....
	Females	102	14	6	11	6	7	7	9	4	12	7	6	13	....
74	Total	217	19	23	13	20	22	11	17	17	16	18	19	22	....
	Males	126	10	13	6	11	14	7	9	9	8	10	11	13	....
	Females	91	9	5	7	9	8	4	8	8	8	8	8	9	....
75	Total	223	45	18	10	23	11	17	15	11	13	20	17	23	....
	Males	123	25	7	6	15	5	11	5	8	6	11	9	15	....
	Females	100	20	11	4	8	6	6	10	3	7	9	8	8	....
76	Total	239	31	18	21	22	20	15	14	20	13	21	22	22	....
	Males	141	19	8	10	12	13	9	8	9	10	16	14	13	....
	Females	98	12	10	11	10	7	6	6	11	3	5	8	9	....
77	Total	193	17	18	18	22	17	8	14	13	14	24	15	13	....
	Males	119	10	9	9	14	13	4	8	9	9	14	10	10	....
	Females	74	7	9	9	8	4	4	6	4	5	10	5	3	....

Table 56.—CONTINUED.—*Deaths by ages, sex and months.*

Ages in years.	Sex.	Year, 1892.	Months, 1892.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
78	Total	193	21	26	13	18	17	5	12	10	16	15	20	20	....
	Males	113	13	14	8	7	9	4	6	7	5	14	12	14	....
	Females	80	8	12	5	11	8	1	6	3	11	1	8	6	....
79	Total	158	35	22	14	16	6	7	11	9	6	12	8	12	....
	Males	96	19	11	8	12	3	4	8	7	3	8	6	7	....
	Females	62	16	11	6	4	3	3	3	2	3	4	2	5	....
80	Total	184	29	17	13	14	8	15	13	9	15	12	13	26	....
	Males	108	17	11	10	5	3	7	9	4	10	8	8	16	....
	Females	76	12	6	3	9	5	8	4	5	5	4	5	10	....
81	Total	160	25	15	13	15	8	8	16	10	7	14	11	17	1
	Males	89	17	7	7	8	2	4	11	4	4	8	6	10	1
	Females	71	8	8	6	7	6	4	5	6	3	6	5	7	....
82	Total	181	27	14	21	12	13	16	13	12	10	8	13	22	....
	Males	104	17	10	13	7	7	8	7	10	3	5	5	12	....
	Females	77	10	4	8	5	6	8	6	2	7	3	8	10	....
83	Total	117	24	13	13	4	8	3	9	9	14	8	3	9	....
	Males	66	15	5	5	3	4	2	4	6	10	6	2	4	....
	Females	51	9	8	8	1	4	1	5	3	4	2	1	5	....
84	Total	137	13	9	13	21	8	9	11	10	8	9	15	12	....
	Males	74	9	3	6	10	4	3	7	4	2	7	12	7	....
	Females	63	4	6	6	11	4	6	4	6	6	2	3	5	....
85	Total	100	20	7	7	7	6	5	7	5	9	9	10	8	....
	Males	57	13	4	4	4	2	4	4	1	3	5	5	3	....
	Females	43	7	3	3	3	4	1	3	4	1	4	5	5	....
86	Total	78	13	9	4	9	3	2	4	3	1	3	2	10	....
	Males	46	7	4	1	5	5	1	4	6	1	4	2	6	....
	Females	32	6	5	3	4	3	1	....	2	....	4	....	4	....
87	Total	90	13	3	6	7	5	4	6	6	3	7	10	10	....
	Males	50	10	5	3	3	2	3	3	5	1	2	7	6	....
	Females	40	3	3	3	4	3	1	3	1	2	5	3	4	....
88	Total	62	10	3	5	6	4	6	4	4	4	7	2	7	....
	Males	29	3	1	2	3	3	4	3	2	1	2	1	4	....
	Females	33	7	2	3	3	1	2	1	2	3	5	1	3	....
89	Total	49	8	6	1	1	3	4	2	4	5	4	7	4	....
	Males	23	4	3	1	....	1	3	1	2	1	1	4	2	....
	Females	26	4	3	....	1	2	1	1	2	4	3	3	2	....

Table 56.—CONCLUDED.—*Deaths by ages, sex and months.*

Ages in years.	Sex.	Year, 1892.	Months, 1892.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
90	Total	45	5	3	3	7	5	....	2	2	2	6	6	4	....
	Males	23	2	2	2	4	3	....	1	1	2	3	2	1	....
	Females	22	3	1	1	3	2	....	1	1	....	3	4	3	....
91	Total	25	4	2	1	3	....	3	1	2	2	3	2	1	1
	Males	12	2	2	1	1	....	1	1	....	1	1	....	1	1
	Females	13	2	....	....	2	....	2	....	2	1	2	2	....	....
92	Total	39	7	3	4	1	3	1	....	6	1	4	4	5	....
	Males	24	5	2	3	....	1	1	....	2	....	2	3	5	....
	Females	15	2	1	1	1	2	....	....	4	1	2	1	....	....
93	Total	16	4	1	3	....	2	2	....	....	....	1	2	1	....
	Males	7	2	....	2	....	2	1	....	....	....	....	....	....	....
	Females	9	2	1	1	....	....	1	....	....	....	1	2	1	....
94	Total	15	2	2	3	1	1	....	1	....	....	3	1	1	....
	Males	10	1	2	2	....	1	....	1	....	....	1	1	1	....
	Females	5	1	....	1	1	....	....	....	....	....	2	....	....	....
95	Total	7	2	....	....	....	1	....	....	1	....	1	1	1	....
	Males	2	....	....	....	....	....	....	....	1	....	....	1	....	....
	Females	5	2	....	....	....	1	....	....	....	....	1	....	1	....
96	Total	11	3	1	1	1	....	....	....	....	1	1	1	2	....
	Males	3	1	1	....	....	....	....	....	....	....	....	1	....	....
	Females	8	2	....	1	1	....	....	....	....	1	1	....	2	....
97	Total	4	1	....	1	....	....	....	1	....	....	....	....	....	1
	Males	2	....	....	1	....	....	....	1	....	....	....	....	....	....
	Females	2	1	....	....	....	....	....	....	....	....	....	....	....	1
98	Total	3	1	....	....	....	1	1	....	....	....	....	....	....	....
	Males	2	1	....	....	....	....	1	....	....	....	....	....	....	....
	Females	1	....	....	....	....	1	....	....	....	....	....	....	....	....
99	Total	3	....	....	....	1	....	2	....	....	....	....	....	....	....
	Males	1	....	....	....	1	....	....	....	....	....	....	....	....	....
	Females	2	....	....	....	....	....	2	....	....	....	....	....	....	....
100 and over	Total	4	....	....	....	....	....	....	....	....	1	2	1	....	....
	Males	.....	....	....	....	....	....	....	....	....	....	....	....	....	....
	Females	4	....	....	....	....	....	....	....	....	1	2	1	....	....
Unknown	Total	425	50	29	15	47	30	27	30	35	32	49	36	32	13
	Males	241	26	19	11	22	19	17	17	22	17	32	18	15	6
	Females	154	16	8	4	21	10	8	11	13	14	15	13	14	7
	Unknown	30	8	2	....	4	1	2	2	....	1	2	5	3	....

From Table 56 the statements concerning the average ages at death of each sex, which are given in Table 57, are derived. To allow for the omission of the months in excess of whole years and for the days in excess of whole months in children aged less than one year, one-half year and one-half month respectively are added to the aggregate for each individual of these classes, and the resulting total being divided by the total number of individuals, less those of unknown age, the average age stated in the table is obtained.

Table 57.—*By nativity, the average age of decedents in Michigan in 1892, compared with 1890–91 and with the mean of the average ages for the ten-year period, 1882–91. (Still-births included.)*

Nativity of decedents.	Average age at death, 1890.			Average age at death, 1891.			Average age at death, 1892.			Mean of average ages, 1882–91.		
	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.
All nativities	28.6	30.5	29.4	30.3	31.6	30.1	32.2	32.4	32.0	28.0	28.9	27.8
Native-born	24.8	23.4	23.2	24.0	23.9	24.1	24.9	24.5	25.5	22.3	22.0	21.9
Foreign-born	49.9	50.0	48.4	53.5	54.8	51.3	52.6	53.0	52.1	49.7	50.1	49.1

The difference between the average ages at death of native-born and foreign-born inhabitants comes largely from the fact that children born of foreign parents are classed among the natives and that the death-rate among children is much higher than among adults. The inclusion of still-births in this table also lowers the average age at death for all nativities, and especially for the native-born as compared with the foreign-born, in the latter of which no still-births are found. As an illustration of this fact, the average ages at death were calculated for deaths of all nativities and deaths of the native-born for the year 1892 with omission of still-births, and the figures subjoined may be compared with those stated in the table for the same year:—

Average age at death, by nativity, 1892. (Still-births excluded.)

Nativity.	Persons.	Males.	Females.
All nativities	33.7	34.1	33.3
Native-born	26.5	26.3	26.8
Foreign-born (same as stated in Table 57)	52.6	53.0	52.1

INFANT MORTALITY.*

Tables 58 to 62, inclusive, are designed to exhibit some important facts in regard to a very numerous class of deaths—those of infants dying before the completion of the

* See, also, Table 50, p. 112, for statements of the death-rates of infants under one year of age per 1,000 living population at that age, and per cents of deaths of infants under one year to total deaths at specified ages, for the years 1870–92. Also death-rates under one year per 1,000 births. Still-births are excluded from both births and deaths in Table 50.

first year of life. By referring to table 53 it will be seen that such deaths amounted to 23.5 per cent of the total number of deaths in 1892 at all ages. It should be remembered, however, that a large number of still-births are included in this statement of the number of deaths of children under one year of age. Omitting these, and also making the comparison include only deaths in which the age was specified, we find that 20.2 per cent of the deaths of 1892 were of infants aged under one year (Table 50).

This ratio, although lower than that inclusive of still-births, is sufficiently high to indicate the necessity of careful study of the causes of death of the infants who succumb during their first year of life. The distribution of these deaths through the year, so far as our present defective system of registration affords any information, and their relation to the number of children born in this and the preceding year, from whose numbers these deaths are taken, are the principal subjects discussed in these tables. The important diseases affecting infantile mortality are referred to in the following section of this report.

It is to be regretted that still-births were originally included in these tables relating to infant mortality, as they serve only to complicate and obscure the subject. They are all included in the number of deaths under one month of age, and the death-rate during the first month of life appears, therefore, exaggerated out of all proportion to the death-rates of the other months of the first year. In order to preserve the uniformity of the tables in the present report with those of preceding years, they are included as usual, and their number and relation to total births stated in Table 58. The number of still-births reported for each month may be found in Table 25, Part II.

Table 58.—*The relation of still-births to all deaths as returned for the years 1890–92 and the average for ten years 1882–91. Corrected by means of the returns of births.*

	Year.			
	1890.	1891.	1892.	Av. for 10 years, 1882–91.
Total deaths, including still-births	21,642	22,079	21,729	19,150
Number of still-births	1,397	1,090	1,014	1,046
Per cent of still-births to total deaths	6.5	4.9	4.7	5.5

Still-births are returned by the enumerators in their lists of births as well as of deaths, and it requires careful comparison of both sets of returns to insure that none be omitted or duplicated. This practice has been followed in these reports since 1874, and the result is that a somewhat higher proportion of deaths of this class is obtained than would result from a single enumeration. As an average correction, to be applied when it is desirable to compare statements of mortality in these reports with the reports of States in which still-births are not collected, about five per cent may be subtracted from total deaths. Still-births probably show about the same percentages of deficiency in enumeration, so far as the months in which they occur are concerned, as other deaths.

?; distinguishing
in previous year.

ıs, 1892.

ı in ar.	All aged under one year.		
tal.		Sex.	Total.
190	Born in 1891 and 1892.	219 162	381
142		194 139	333
113		224 165	389
124		227 160	387
74		209 161	370
53		196 120	316
85		265 182	447
109		368 288	656
52		311 214	525
28		244 183	427
6		220 162	382
		289 195	434
976			
		2,916 2,131	
			5,047

Table 59, a full explanation of the arrangement of which is given below, is ingenious in form, and were it not for the facts that still-births are included in it and that the data derived from the present method of enumeration are quite unreliable so far as the relative numbers of deaths reported in the several months of the year are concerned, would be of considerable value. Very little can be asserted with any degree of positiveness as to the comparative influence of the different months and seasons on the infantile death-rate. The same uncertainty attaches to the results reached in the four tables following in which births and deaths by months are compared.

EXPLANATION OF TABLE 59.--Although this table may appear at first sight to be very intricate and complicated in arrangement, the central or body part of the table is quite simple in principle, and this being understood, the use of the remainder, which consists entirely of footings for special purposes, easily follows. The following groups of statements are made in this table:

1. *The number of children, of each sex, who died during each month of the year 1892, arranged according to their ages at death in months.* This portion of the table is identical with the first part of Table 56 for the ages from under one month to eleven months. The footings showing the total number of deaths for each month of 1892 of children under one year of age are at the extreme right of the table in the column headed "Deaths by months—all aged under one year." The greatest mortality was for the month of August in which occurred 656 deaths; the least for June, only 316. The numbers given for the latter months of the year are larger than those for the earlier months on account of being more accurately recorded, apart from any actual differences in mortality between the different months.

2. *The months of birth in 1891 and 1892 of children dying at each age, in months, during each month of the year 1892.* Here the *diagonal footings* came into use, for convenience in making which the heavy diagonal line and the plan of printing *alternate diagonal lines* in different styles of type are employed.

(a.) *The numbers on the left of the diagonal line represent children dying at each age in months, and during each month of the year 1892, who were born in that year, 1892.*

(b.) *The numbers on the right of the diagonal line represent children dying at each age in months, and during each month of the year 1892, who were born in the previous year, 1891.*

This will be readily seen by taking an example. The upper left hand space of the body of the table contains the numbers 110, 81, which affirm that 110 males and 81 females died during the month of January, 1892, aged less than one month. "This being the first month of the year of death, it will be seen by a little reflection that all who died during the month of January under one month of age, were also born during the same month [not strictly true], being the first month of the year of death, 1892; while those who died at *one month* of age, 18 males and 11 females, were born in December, the last month of the previous year, 1891."

"Hence there is drawn a short perpendicular line between those *under* one month of age, and those *at* one month of age, thus separating those who were born during the year of death from those who were born during the previous year."

"Take again the month of February; it will readily be seen that those dying at one month of age were born in January, the *first* month of the year of death, while those dying at two months of age, were born in December, the *last* month of the previous year. Here the short perpendicular line is drawn between those at *one* month of age and those at *two* months of age, thus separating, as for the month of January, those who were born during the year of death, from those who were born during the previous year. These short perpendicular lines connected by short horizontal lines make up the heavy angling line which runs diagonally through the entire table, separating, for all the months of the year of death, those who were born during the year of death from those who were born during the previous year."

(c.) "*One other valuable exhibit in the table is the month of birth of all those who died during each month of the year.* As has already been shown, the heavy angling line separates children born in the year of death from those born in the previous year. This being true, it may be seen at a glance that the first diagonal column of figures at the left of the angling line would represent the births for the month of January, the first month of the year of death; the second column would represent the births for the month of February, the second month of the year of death; the third, for the month of March, the third month of the year of death, and so on *through the current year.* The first diagonal column of figures at the right of the angling line would represent the births for the month of December; the second column at the right, the births for November; the third, those for October and so back *through the previous year.* It will be seen that the diagonal columns representing the months of birth on the left of the angling line,

running upward, terminate opposite their respective months. This is not accidental but in harmony with an invariable rule; for, having given the month of death and the age in months, to find the month of birth, we necessarily count backward as many months as the child is months old. For instance, a child dying in February at one month of age, was born in January, one month previous; a child dying in March at two months of age, was born in January, two months previous. A child dying in April at three months of age, was born in January, three months previous, etc. The diagonal columns at the right of the angling line, running downward, representing births, also terminate opposite their respective months, the first opposite the month of December, the second opposite the month of November, the third opposite the month of October, etc.

"In footing the diagonal columns, those on the left of the angling line are footed toward the top, the results being placed opposite the months; those on the right of the angling line are footed downward, these results also being placed opposite the months." The figures constituting these lines are printed alternately in light and heavy-faced type, making it easy to follow their extensions to the proper square where the footings are given, and which indicate, following the horizontal lines back to the list of months on the left of the table, *the months of birth*.

(d.) The extensions in the two columns on the right, whose sum is given in the third and last column of the table, are made with reference to the diagonal line. The first of these is the summation of the squares on the left of the line and shows the number of deaths in each month of 1892 of children born in the same year. The second column is the extension of the squares on the right of the diagonal line and gives the numbers of deaths in 1892 of children under one year of age, who were born in 1891.

(e.) In like manner the footings in the three series at the base of the table show the number of children dying at each age under one year, and whether born in the year of death, 1892, or in the previous year, 1891. The footings for the first series include all squares below the diagonal line; for the second, all squares above the line are brought down.

Table 60 is formed by combining the evidence presented in the preceding table in regard to the months of death of children born in 1891 who died under one year of age in 1892 with the statements made in the corresponding table of the report for the preceding year in regard to the months of death in 1891 of chidren born in that year. It is evident that the combination of the two years gives the total number of deaths under one year of children born in 1891.

In the table the deaths in 1891 and 1892 are placed opposite the months of birth in 1891, and a statement of the total number of births, by sex, for each month of 1891, is presented, in order that the ratio of deaths under one year of age to the total number of births, may be noted for each month of the year. It has been shown that the mortality of children under one year of age is larger than that for any other period of life. A child who escapes the dangers incident to the first year of existence has a greatly increased chance of survival to adult years. Comparison of the months of the year with reference to the probability of survival of children born in them, may be made by this table, as also may be studied the influence of sex. The deficiency in the enumeration of certain months, as also the fact that a large number of still-births are included, should be taken into consideration.

Table 61 shows, for the children born in 1891 who died in 1891 and 1892, the months of death in each of those years. The large number of children who died under one month of age may be noted. The per cents of deaths under one month to total deaths under one year, and to total births, are stated for each month of birth.

Table 62 concludes the list of tables relating particularly to deaths of the very young. It shows the per cents, by sex, of deaths of infants aged under one month to births for each month of the year 1892. The ratios may be compared with those for 1891 contained in the preceding table.

Table 60.—*Of the children born in 1891, the number who died during the year 1891; the number who died during the year 1892, under one year of age; and the per cent of the decedents under one year of age to the total number of children born in 1891, according to the returns. (Still-births included.)*

Months of birth.	Born in 1891.					Males born in 1891.					Females born in 1891.				
	Births in 1891 as returned.	Died during the year 1891.	Died aged under 1 year during the year 1892.	Total died aged under 1 year.	Per cent of deaths under 1 to births.	Births of males 1891. as returned.	Died during the year 1891.	Died aged under 1 year during the year 1892.	Total died aged under 1 year.	Per cent of deaths under 1 to births.	Births of females 1891 as returned.	Died during the year 1891.	Died aged under 1 year during the year 1892.	Total died aged under 1 year.	Per cent of deaths under 1 to births.
Year	* 50,759	4,350	976	5,326	10.5	26,416	2,494	549	3,043	11.5	24,221	1,966	427	2,393	9.9
January	3,629	415	.....	415	11.4	1,914	237	.....	237	12.4	1,708	178	.....	178	10.4
February	3,534	447	10	457	12.9	1,857	241	6	247	13.3	1,674	206	4	210	12.5
March	4,345	480	24	504	11.6	2,292	288	14	302	13.2	2,045	202	10	212	10.4
April	4,238	495	29	524	12.4	2,205	267	13	280	12.7	2,025	228	16	244	12.0
May	4,465	434	56	490	11.0	2,259	232	25	257	11.4	2,191	202	31	233	10.6
June	4,078	417	64	481	11.8	2,090	223	34	257	12.3	1,979	194	30	224	11.3
July	4,293	369	87	456	10.6	2,180	215	43	258	11.8	2,097	154	44	198	9.4
August	4,702	384	95	479	10.2	2,435	215	55	270	11.1	2,255	169	40	209	9.3
September	4,646	284	118	402	8.7	2,431	161	62	223	9.2	2,205	123	56	179	8.1
October	4,340	240	159	399	9.2	2,298	141	103	244	10.6	2,029	99	56	155	7.6
November	4,098	231	166	397	9.7	2,192	141	95	236	10.8	1,898	90	71	161	8.5
December	4,391	154	168	322	9.6	2,263	133	99	232	10.3	2,115	121	69	190	9.5

* Excluding 53 in unknown month; 23 males, 25 females and 5 unknown.

Table 61.—*The months of birth and of death of children born in 1891, who died under one year of age.* (*Still-births included.*)

Months of birth, 1891.	Born in 1891, died under 1 year of age*	Months of death, 1891.												Months of death, 1892.												Per cent of deaths under 1 month to deaths under 1 year.	Births in 1891.†	Per cent of deaths under 1 month to births.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.			
Year	5,326	178	213	263	316	260	319	386	609	546	466	377	417	190	142	113	124	74	53	85	109	52	28	6	.....	42.9	50,759	4.5
January	415	178	33	26	26	9	20	23	31	24	16	8	21	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	42.9	3,629	4.9
February	457	....	180	28	29	18	21	29	51	36	18	15	22	10	.....	....	.....	....	.....	....	.....	....	.....	....	.....	39.4	3,534	5.1
March	504	....	....	209	39	19	23	34	58	44	25	15	14	12	12	....	.....	....	.....	....	.....	....	.....	....	.....	41.5	4,345	4.8
April	524	....	....	....	222	22	36	45	78	30	34	10	18	10	11	8	.....	....	.....	....	.....	....	.....	....	.....	42.4	4,238	5.2
May	490	....	....	....	....	192	28	39	60	37	40	16	22	16	10	16	14	....	.....	....	.....	....	.....	....	.....	39.2	4,465	4.3
June	481	....	....	....	....	....	191	39	68	50	24	16	29	13	13	12	12	14	.....	....	.....	....	.....	....	.....	39.7	4,078	4.7
July	456	....	....	....	....	....	....	177	45	63	41	22	21	16	18	9	23	9	12	....	.....	....	.....	....	.....	38.8	4,293	4.1
August	479	....	....	....	....	....	....	....	218	77	39	23	27	23	18	8	20	7	7	12	.....	....	.....	....	.....	45.5	4,702	4.6
September	402	....	....	....	....	....	....	....	....	185	44	29	26	13	16	14	13	13	11	16	22	....	.....	....	.....	46.0	4,646	4.0
October	399	....	....	....	....	....	....	....	....	....	185	29	26	21	19	11	14	8	5	21	33	27	.....	....	.....	46.4	4,340	4.3
November	397	....	....	....	....	....	....	....	....	....	....	194	37	27	19	21	13	13	7	18	20	13	15	....	.....	48.9	4,098	4.7
December	322	....	....	....	....	....	....	....	....	....	....	....	154	29	6	14	15	10	11	18	34	12	13	6	.....	47.8	4,391	3.5
Number of deaths‡	5,326	....	....	....	....	....	....	....	....	....	....	....	....	2285	450	407	366	320	287	283	209	203	171	172	173	.....	.....	.....
Ages in months‡	.....	....	....	....	....	....	....	....	....	....	....	....	....	-1	1	2	3	4	5	6	7	8	9	10	11	.....	.....	.....

* Excluding deaths in unknown month and of unknown sex. † Excluding 53 births in unknown month. ‡ Deaths at each age.

Table 62.—*The relation, by months, of the decedents aged under one month to the births returned for the year 1892. (Still-births included).*

Sex, etc., specified.		Year, 1892.	Months, 1892.											
			Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Unk.
Total	Births *	46,221	3,226	3,315	3,745	3,928	3,977	3,681	3,929	4,168	4,088	3,918	3,853	4,344	49
	Deaths aged under one month *	2,356	195	170	219	191	191	182	174	229	190	180	187	244	4
	Per cent of deaths to births	5.1	6.0	5.1	5.8	4.9	4.8	4.9	4.4	5.5	4.6	4.6	4.9	5.6	8.0
Males	Births	24,148	1,701	1,729	1,969	2,088	2,025	1,939	2,086	2,213	2,088	2,038	2,040	2,254	28
	Deaths aged under one month	1,386	110	104	119	117	107	112	113	145	114	104	103	136	3
	Per cent of deaths to births	5.7	6.5	6.0	6.0	5.6	5.3	5.8	5.6	6.6	5.5	5.1	5.0	6.0	7.1
Females	Births	21,995	1,522	1,584	1,771	1,831	1,947	1,732	1,888	1,950	1,990	1,874	1,803	2,083	20
	Deaths aged under one month	921	81	64	97	70	82	65	57	80	71	73	76	104	1
	Per cent of deaths to births	4.2	5.3	4.0	5.5	3.8	4.2	3.8	3.0	4.1	3.6	3.9	4.2	5.0	5.0
Unknown	Births	78	3	2	5	9	5	10	5	5	10	6	10	7	1
	Deaths aged under one month	49	4	2	3	4	2	5	4	4	5	3	8	4	1

* Still-births included in births and deaths.

Table 63.—*Exhibiting, by sex, for the State and counties, the color of decedents, as returned for the year 1892. (Still-births included.)*

State and counties.	All colors, 1892.				White.				Black.				Mulatto.				Indian.				Unknown.			
	Total.	Males.	Females.	Unknown.	Total.	Males.	Females.	Unknown.	Total.	Males.	Females.	Unknown.	Total.	Males.	Females.	Unknown.	Total.	Males.	Females.	Unknown.	Total.	Males.	Females.	Unknown.
State	21,729	11,837	9,809	83	21,395	11,659	9,679	57	137	79	58	..	49	27	22	..	93	54	39	..	55	18	11	26
Alcona	40	23	17	..	36	20	16	..	..	..	..	..	..	..	..	..	4	3	1	..	..	..	..	..
Alger	10	7	3	..	10	7	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Allegan	356	192	163	1	353	191	161	1	1	1	..	..	..	..	..	..	2	..	2	..	..	..	..	..
Alpena	154	87	67	..	154	87	67	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Antrim	87	54	33	..	85	52	33	..	..	..	..	..	..	..	..	..	2	2	..	..	..	..	..	..
Arenac	51	31	20	..	50	30	20	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..
Baraga	41	26	15	..	27	18	9	..	..	..	..	..	..	..	..	..	14	[a]8	[a]6	..	..	..	..	..
Barry	164	93	71	..	164	93	71	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Bay	594	319	274	1	594	319	274	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Benzie	53	34	19	..	53	34	19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Berrien	314	160	154	..	306	155	151	..	6	4	2	..	2	1	1	..	..	..	..	..	..	..	..	..
Branch	255	135	120	..	254	134	120	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Calhoun	409	215	192	2	402	211	189	2	4	2	2	..	1	..	1	..	2	2	..	..	..	..	..	..
Cass	175	100	75	..	154	89	65	..	13	7	6	..	7	4	3	..	1	..	1	..	..	..	..	..
Charlevoix	75	46	29	..	74	45	29	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..
Cheboygan	110	57	52	1	108	56	51	1	..	..	..	..	..	..	..	..	2	1	1	..	..	..	..	..
Chippewa	98	55	43	..	92	49	43	..	..	..	..	..	..	..	..	..	6	[b]6	..	..	..	..	..	..
Clare	45	25	20	..	45	25	20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Clinton	241	123	118	..	241	123	118	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Crawford	23	9	14	..	23	9	14	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Delta	141	88	52	1	141	88	52	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dickinson	194	118	76	..	192	117	75	..	..	..	..	..	1	1	..	..	1	..	1	..	..	..	..	..
Eaton	288	148	140	..	287	148	139	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..
Emmet	64	30	34	..	37	19	18	..	..	..	..	..	..	..	..	..	27	11	16	..	..	..	..	..
Genesee	407	209	197	1	406	209	196	1	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Gladwin	13	7	6	..	13	7	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gogebic	456	301	133	22	431	294	133	4	..	..	..	..	..	..	..	..	..	..	..	..	25	7	..	18
Grand Traverse	136	78	56	2	135	78	56	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1
Gratiot	188	96	91	1	188	96	91	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hillsdale	323	180	143	..	322	180	142	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..
Houghton	552	318	234	..	552	318	234	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Huron	225	130	94	1	225	130	94	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

[a] 1 male, 4 females white and Indian. [b] 2 males white and Indian.

Table 63.—CONTINUED.—*Deaths by counties, sex and color.*

Counties.	All colors, 1892.				White.				Black.				Mulatto.				Indian.				Unknown.			
	Total.	Males.	Females.	Unknown.	Total.	Males.	Females.	Unknown.	Total.	Males.	Females.	Unknown.	Total.	Males.	Females.	Unknown.	Total.	Males.	Females.	Unknown.	Total.	Males.	Females.	Unknown.
Ingham	386	204	179	3	381	202	176	3	5	2	3	..	..	..	..	..	..	..	..	..	..	..	..	..
Ionia	265	141	123	1	265	141	123	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Iosco	168	94	71	3	167	94	71	2	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1
Iron	62	42	19	1	62	42	19	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Isabella	116	63	53	..	111	58	53	..	..	..	..	..	..	..	..	..	5	5	..	..	..	..	..	..
Jackson	490	255	229	6	485	252	227	6	4	2	2	..	1	1	..	..	..	..	..	..	..	..	..	..
Kalamazoo	433	219	213	1	426	216	209	1	3	2	1	..	4	1	3	..	..	..	..	..	..	..	..	..
Kalkaska	48	19	29	..	48	19	29	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kent	1,321	710	609	2	1,314	706	606	2	5	2	3	..	..	..	..	..	..	..	..	..	2	2	..	..
Keweenaw	52	26	26	..	52	26	26	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Lake	28	17	11	..	27	17	10	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..
Lapeer	197	102	94	1	197	102	94	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Leelanau	52	27	25	..	48	24	24	..	..	..	..	..	..	..	..	..	4	3	1	..	..	..	..	..
Lenawee	412	218	194	..	406	214	192	..	6	4	2	..	..	..	..	..	..	..	..	..	..	..	..	..
Livingston	166	90	76	..	165	89	76	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Luce	24	13	11	..	24	13	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mackinac	43	20	23	..	38	16	22	..	..	..	..	..	*	..	..	..	4	*3	1	..	1	1	..	..
Macomb	335	197	138	..	334	196	138	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..
Manistee	204	121	83	..	201	119	82	..	1	1	..	..	..	..	..	..	..	..	..	..	2	1	1	..
Manitou	2	1	1	..	2	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Marquette	574	346	228	..	574	346	228	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mason	151	93	58	..	150	93	57	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..
Mecosta	126	74	52	..	124	73	51	..	1	1	..	..	1	..	1	..	..	..	..	..	..	..	..	..
Menominee	174	99	73	2	173	99	73	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1
Midland	89	44	45	..	88	43	45	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..
Missaukee	47	26	21	..	45	25	20	..	..	..	..	..	..	..	..	..	2	1	1	..	..	..	..	..
Monroe	296	151	145	..	291	148	143	..	4	2	2	..	1	1	..	..	..	..	..	..	..	..	..	..
Montcalm	241	134	107	..	238	132	106	..	3	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Montmorency	6	4	2	..	6	4	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Muskegon	449	225	217	7	447	225	215	7	2	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..
Newaygo	116	63	53	..	113	60	53	..	..	..	..	..	..	..	..	..	3	3	..	..	..	..	..	..
Oakland	445	248	197	..	436	245	191	..	6	3	3	..	3	..	3	..	..	..	..	..	..	..	..	..
Oceana	87	49	38	..	83	46	37	..	..	..	..	..	..	..	..	..	4	3	1	..	..	..	..	..
Ogemaw	32	25	7	..	32	25	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ontonagon	20	9	11	..	20	9	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

* 3 males white and Indian.

Table 63.—CONCLUDED.—*Deaths by counties, sex and color.*

Counties.	All colors, 1892.				White.				Black.				Mulatto.				Indian.				Unknown.			
	Total.	Males.	Females.	Unknown.	Total.	Males.	Females.	Unknown.	Total.	Males.	Females.	Unknown.	Total.	Males.	Females.	Unknown.	Total.	Males.	Females.	Unknown.	Total.	Males.	Females.	Unknown.
Osceola	101	56	45	....	101	56	45	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Oscoda	12	5	7	....	12	5	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Otsego	33	18	15	....	33	18	15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ottawa	351	173	174	4	343	170	170	3	..	..	..	..	..	..	..	..	..	..	..	..	8	3	4	1
Presque Isle	32	13	19	....	32	13	19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Roscommon	13	9	4	....	13	9	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Saginaw	1,087	571	515	1	1,081	569	511	1	..	..	..	..	2	1	1	..	4	1	3	..	..	..	..	..
Sanilac	287	137	148	2	280	134	144	2	..	..	..	..	..	..	..	..	..	..	..	..	7	3	4	..
Schoolcraft	46	27	19	....	46	27	19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Shiawassee	184	104	80	....	184	104	80	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
St. Clair	575	297	278	....	574	297	277	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
St. Joseph	315	145	170	....	310	145	165	..	5	..	5	..	..	..	..	..	..	..	..	..	..	..	..	..
Tuscola	219	107	108	4	217	107	107	3	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	1
Van Buren	286	155	128	3	271	146	122	3	9	6	3	..	5	3	2	..	1	..	1	..	..	..	..	..
Washtenaw	436	233	202	1	421	222	198	1	5	4	1	..	9	6	3	..	..	..	..	..	1	1	..	..
Wayne	3,722	2,067	1,647	8	3,659	2,029	1,625	5	50	32	18	..	10	6	4	..	..	..	..	..	3	..	..	3
Wexford	91	57	34	....	91	57	34	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

COLOR AND RACE OF DECEDENTS, 1892.

Table 63 presents a detailed statement, by counties, of the deaths that occurred in 1892 of each color and race. Of the total number of decedents, 21,729, 21,395, or 98.46 per cent were white; 137, or .63 per cent black; 49 or .23 per cent mulatto; and 93 or .43 per cent Indian. There were also 55 deaths or .25 per cent of the total number in which the color was unspecified. As with births and marriages, the number and ratio of colored deaths is so small, and fluctuates so widely in different years from incidental causes, that minute comparison of the death-rates of the different colors and races for any single year is not advisable. In Table 11, Part I, the number of inhabitants of each color and race is given for the State as determined by the last United States census, and the number of marriages, persons married, births and deaths are also exhibited there in convenient form for comparison. Failure to specify color is almost certainly the result of neglect or carelessness on the part of the enumerator, since it is a fact that would be plainly in evidence if he had made a personal inquiry as required by law. Of the 55 deaths in which this return was not properly made, 25 occur in Gogebic county, which county, as noted on the following page, sent in very defective returns in other respects.

NATIVITY OF DECEDENTS, 1892.

In Table 64 the number and proportion of decedents of each nativity during the year 1892 are compared with the corresponding figures for the years 1890 and 1891, and with the average for ten years from 1882 to 1891, inclusive. The per cent of deaths of native-born persons is slightly lower than the per cents for the two years preceding, and decidedly lower than the ten-year average. The per cent of deaths of foreign-born persons is higher for 1892 than for the years 1890, 1891 and the average, 1882–91. These changes may be regarded as dependent upon a lessened amount of immigration into this State in recent years, whereby the native-born population, constantly recruited by natural increase, would tend to show a diminished number of deaths; the foreign-born population, on the contrary, would show a greater average age every year and a consequently higher death-rate, the supply of young adults being lessened.

In corroboration of this view, Table 57 may be referred to, in which the average age at death of foreign-born decedents appears to have risen in recent years. The average age at death of all decedents of foreign birth was 52.6 years in 1892. In 1885 it was 49.9 years; in 1880, 47.7 years, and in 1875 it was 46.9 years. The death-rate of foreign-born inhabitants of Michigan in 1890 (see Table 66, Michigan Registration Report for 1891) was 9.1 per 1,000 foreign-born population; in 1884 the corresponding death-rate was 6.9. Of course 1890 was subject to an unusual amount of mortality in persons of advanced years from influenza, and other diseases influenced by its effects, but it is probable that an average year at present would show an increased death-rate in our foreign-born population over that of 1884, for example, owing to greater average age.

Table 64.—*Nativity of decedents in Michigan for the years 1890–92, and the average for ten years, 1882–91. (Still-births included.)*

Nativity of decedents.	Deaths, 1890.		Deaths, 1891.		Deaths, 1892.		Average for ten years, 1882-91.	
	Number.	Per cent of total.	Number.	Per cent of total.	Number.	Per cent of total.	Number.	Per cent of total.
All nativities	21,642	100.0	22,079	100.0	21,729	100.0	19,150	100.0
Native-born	15,890	73.4	16,257	73.7	15,683	72.2	14,510	75.8
Foreign-born	4,908	22.7	4,811	21.8	4,915	22.6	3,974	20.8
Unknown	844	3.9	981	4.5	1,131	5.2	666	3.5

Table 65 shows the number of deaths of each nativity returned for each county of the State. The totals given may be compared, by sex, with the corresponding number of inhabitants in Michigan in 1890, as stated in Table 11, Part I, and the number of deaths of native-born and foreign-born persons may also be compared, by counties, with the inhabitants of each class as presented in Table 14, Part I. Great carelessness is apparent in certain counties in regard to the specification of nativity. This is especially true of Gogebic county, from which 152 deaths out of a total of 456 were returned unspecified. In other respects, statement of cause of death, name of parents, etc., the returns of this county were worthless for statistical or any other purpose, whole pages being filled up with "unknowns." There should be a provision of the law by which the returns made by supervisors should be examined by competent persons before they are accepted and *paid for*, and all such results of neglect or incompetency be promptly rejected and a correct enumeration made.

Table 65.—*Exhibiting, by number and by sex, for the State and counties, the nativity of decedents returned for the year 1892. (Still-births included.)*

State and counties.	All nativities, 1892.				Native.				Foreign.			Unknown.			
	Total.	Males.	Females.	Unknown.	Total.	Males.	Females.	Unknown.	Total.	Males.	Females.	Total.	Males.	Females.	Unknown.
State	21,729	11,837	9,809	83	15,683	8,357	7,271	55	4,915	2,823	2,092	1,131	657	446	28
Alcona	40	23	17	...	29	15	14	...	9	7	2	2	1	1	...
Alger	10	7	3	...	2	1	1	...	7	5	2	1	1	...	...
Allegan	356	192	163	1	277	150	126	1	59	31	28	20	11	9	...
Alpena	154	87	67	...	106	59	47	...	36	22	14	12	6	6	...
Antrim	87	54	33	...	67	42	25	...	19	12	7	1	...	1	...
Arenac	51	31	20	...	36	22	14	...	15	9	6	...	...	...	...
Baraga	41	26	15	...	26	16	10	...	14	9	5	1	1	...	...
Barry	164	93	71	...	141	82	59	...	17	8	9	6	3	3	...
Bay	594	319	274	1	438	233	204	1	151	83	68	5	3	2	...
Benzie	53	34	19	...	41	26	15	...	12	8	4	...	...	...	...
Berrien	314	160	154	...	239	118	121	...	53	26	27	22	16	6	...
Branch	255	135	120	...	219	114	105	...	29	14	15	7	7	...	...
Calhoun	409	215	192	2	317	166	149	2	77	39	38	15	10	5	...
Cass	175	100	75	...	150	86	64	...	14	8	6	11	6	5	...
Charlevoix	75	46	29	...	54	34	20	...	16	10	6	5	2	3	...
Cheboygan	110	57	52	1	92	48	43	1	16	7	9	2	2	...	...
Chippewa	98	55	43	...	57	29	28	...	34	21	13	7	5	2	...
Clare	45	25	20	...	36	19	17	...	9	6	3	...	...	...	...
Clinton	241	123	118	...	197	99	98	...	33	18	15	11	6	5	...
Crawford	23	9	14	...	17	7	10	...	3	2	1	3	...	3	...
Delta	141	88	52	1	92	54	37	1	46	33	13	3	1	2	...
Dickinson	194	118	76	...	136	82	54	...	51	32	19	7	4	3	...
Eaton	288	148	140	...	251	124	127	...	18	12	6	19	12	7	...
Emmet	64	30	34	...	54	26	28	...	9	4	5	1	...	1	...
Genesee	407	209	197	1	329	163	165	1	67	39	28	11	7	4	...
Gladwin	13	7	6	...	8	4	4	...	4	2	2	1	1	...	...
Gogebic	456	301	133	22	190	104	85	1	114	86	28	152	111	20	21
Grand Traverse	136	78	56	2	90	51	37	2	42	25	17	4	2	2	...
Gratiot	188	96	91	1	166	87	78	1	19	9	10	3	...	3	...
Hillsdale	323	180	143	...	271	148	123	...	28	21	7	24	11	13	...
Houghton	552	318	234	...	444	252	192	...	101	61	40	7	5	2	...
Huron	225	130	94	1	134	78	55	1	89	51	38	2	1	1	...
Ingham	386	204	179	3	316	158	155	3	59	41	18	11	5	6	...
Ionia	265	141	123	1	221	116	104	1	35	19	16	9	6	3	...

Table 65.—CONTINUED.—*Deaths by counties, sex and nativity.*

Counties.	All nativities, 1892.				Native.				Foreign.			Unknown.			
	Total.	Males.	Females.	Unknown.	Total.	Males.	Females.	Unknown.	Total.	Males.	Females.	Total.	Males.	Females.	Unknown.
Iosco	168	94	71	3	105	54	48	3	34	22	12	29	18	11	...
Iron	62	42	19	1	33	21	11	1	18	13	5	11	8	3	...
Isabella	116	63	53	...	96	51	45	...	17	10	7	3	2	1	...
Jackson	490	255	229	6	392	201	185	6	83	47	36	15	7	8	...
Kalamazoo	433	219	213	1	316	154	162	...	86	49	37	31	16	14	1
Kalkaska	48	19	29	...	42	17	25	...	4	1	3	2	1	1	...
Kent	1,321	710	609	2	926	495	429	2	339	180	159	56	35	21	...
Keweenaw	52	26	26	...	35	15	20	...	17	11	6	...	...	...	...
Lake	28	17	11	...	20	13	7	...	8	4	4	...	...	...	...
Lapeer	197	102	94	1	139	72	67	...	44	25	19	14	5	8	1
Leelanau	52	27	25	...	35	20	15	...	17	7	10	...	...	...	...
Lenawee	412	218	194	...	322	170	152	...	68	38	30	22	10	12	...
Livingston	166	90	76	...	132	68	64	...	27	18	9	7	4	3	...
Luce	24	13	11	...	17	8	9	...	5	3	2	2	2	...	...
Mackinac	43	20	23	...	33	15	18	...	9	5	4	1	...	1	...
Macomb	335	197	138	...	250	144	106	...	83	51	32	2	2	...	...
Manistee	204	121	83	...	144	82	62	...	46	30	16	14	9	5	...
Manitou	2	1	1	...	1	...	1	...	1	1	...	...	...	...	...
Marquette	574	346	228	...	390	223	167	...	170	115	55	14	8	6	...
Mason	151	93	58	...	110	69	41	...	38	22	16	3	2	1	...
Mecosta	126	74	52	...	98	59	39	...	22	13	9	6	2	4	...
Menominee	174	99	73	2	136	74	60	2	36	23	13	2	2	...	...
Midland	89	44	45	...	71	31	40	...	17	13	4	1	...	1	...
Missaukee	47	26	21	...	39	21	18	...	7	4	3	1	1	...	...
Monroe	296	151	145	...	230	113	117	...	45	25	20	21	13	8	...
Montcalm	241	134	107	...	187	105	82	...	38	22	16	16	7	9	...
Montmorency	6	4	2	...	4	2	2	...	1	1	...	1	1	...	...
Muskegon	449	225	217	7	334	159	168	7	110	64	46	5	2	3	...
Newaygo	116	63	53	...	93	50	43	...	22	12	10	1	1	...	...
Oakland	445	248	197	...	319	178	141	...	110	63	47	16	7	9	...
Oceana	87	49	38	...	71	38	33	...	12	8	4	4	3	1	...
Ogemaw	32	25	7	...	18	15	3	...	11	7	4	3	3	...	...
Ontonagon	20	9	11	...	12	6	6	...	8	3	5	...	...	...	...
Osceola	101	56	45	...	75	36	39	...	20	14	6	6	6	...	...
Oscoda	12	5	7	...	11	5	6	...	1	...	1	...	...	...	...
Otsego	33	18	15	...	29	17	12	...	4	1	3	...	...	...	...

Table 65.—CONCLUDED.—*Deaths by counties, sex and nativity.*

Counties.	All nativities, 1892.				Native.				Foreign.			Unknown.			
	Total.	Males.	Females.	Unknown.	Total.	Males.	Females.	Unknown.	Total.	Males.	Females.	Total.	Males.	Females.	Unknown.
Ottawa	351	173	174	4	231	114	114	3	115	57	58	5	2	2	1
Presque Isle	32	13	19	---	19	7	12	---	13	6	7	------	------	------	---
Roscommon	13	9	4	---	9	6	3	---	4	3	1	------	------	------	---
Saginaw	1,087	571	515	1	663	358	304	1	315	153	162	109	60	49	---
Sanilac	287	137	148	2	163	70	91	2	118	62	56	6	5	1	---
Schoolcraft	46	27	19	---	29	16	13	---	12	8	4	5	3	2	---
Shiawassee	184	104	80	---	158	92	66	---	24	11	13	2	1	1	---
St. Clair	575	297	278	---	373	180	193	---	193	111	82	9	6	3	---
St. Joseph	315	145	170	---	252	117	135	---	34	15	16	29	10	19	---
Tuscola	219	107	108	4	137	73	64	---	52	26	26	30	8	18	4
Van Buren	286	155	128	3	245	133	109	3	23	15	8	18	7	11	---
Washtenaw	436	233	202	1	303	158	144	1	116	68	48	17	7	10	---
Wayne	3,722	2,067	1,647	8	2,524	1,379	1,137	8	997	568	429	201	120	81	---
Wexford	91	57	34	---	69	40	29	---	16	12	4	6	5	1	---

DEATH-RATES BY NATIVITY AND PERIODS OF AGE.

Table 66 concludes the list of tables referring especially to occurrence of deaths with a comparison of the number of deaths at different periods of age, by nativity of decedents. The figures on population were estimated for 1892 by assuming the same rate of increase as in making the estimate for total population in Part I, the data for 1890 being that furnished this office by Acting Superintendent of the Census T. H. Wardle, for the last report. The present table differs materially from the corresponding one in the report for 1891 in that still-births are excluded. This exclusion affects only the age-periods under 5 years, and, to a lesser degree, the rates for all ages and all nativities and for the native-born at all ages.

As regards nativity, the death-rate appears to be higher for the native-born than for the foreign-born until the middle period of life is passed, when the reverse holds true.

The numbers representing the decedents of foreign nativity are small for the early years of life and probably no reliable conclusions can be drawn without more extended investigation. The subject is worthy of more thorough study than has hitherto been accorded it, and as a preliminary step the vague and indefinite term "foreign-born" should be rejected and a detailed study be made by separate nationalities. The changes in vital rates consequent on the transplantation of German, Scandinavian and English stocks upon this soil are of far more importance than questions relating to the numerically insignificant colored population of the State.

Table 66.—*Comparison of deaths in 1892, with estimated population of same nativity and periods of age, showing rates per thousand. (Still-births not included.)*

Ages in periods of years.	Estimated population, 1892.			Deaths, 1892.			Death-rate per 1,000 population, 1892.		
	Total.	Native-born.	Foreign-born.	Total.	Native-born.	Foreign-born.	Total.	Native-born.	Foreign-born.
All ages	2,185,279	1,612,645	572,635	* 20,715	14,669	4,915	9.5	9.1	8.6
Under 5	248,297	236,781	6,516	6,281	6,006	132	25.3	25.4	20.3
5 to 10	246,478	226,554	19,924	967	874	71	3.9	3.9	3.6
10 to 15	228,601	193,936	34,665	526	450	63	2.3	2.3	1.8
15 to 20	214,156	177,539	36,617	770	602	140	3.6	3.4	3.8
20 to 25	209,002	151,228	57,774	949	672	227	4.5	4.4	3.9
25 to 30	186,289	117,913	68,376	890	567	271	4.8	4.8	4.0
30 to 35	171,520	109,609	61,911	808	449	314	4.7	4.1	5.1
35 to 45	261,872	156,530	105,342	1,353	747	529	5.2	4.8	5.0
45 to 55	195,105	111,262	83,843	1,449	765	595	7.4	6.9	7.1
55 to 65	124,391	68,687	55,705	1,761	884	890	14.1	12.9	16.0
All over 65	99,257	58,499	40,758	4,536	2,465	1,616	45.7	42.1	39.6
Unknown	5,312	4,108	1,205	425	188	67	80.0	45.8	55.6

* Including 1,131, deaths of unknown nativity.

TOWNSHIPS REPORTING NO DEATHS, AND DELINQUENT TOWNSHIPS.

The list of townships whose supervisors reported that no deaths occurred in them during the calendar year 1892 is given in Table 67. The aggregate population (22,154) is considerably greater than that of the townships making such returns for 1891 (12,535), but it is undoubtedly true that deaths did occur in many of these townships and the supervisors neglected to enumerate them as required by law. Several of these townships show a population of over 1,000, and one of them, Laketon, Muskegon county, had 2,204 inhabitants in 1890.

A very marked improvement is shown in the list of entirely delinquent townships given in Table 68 over the corresponding list for 1891. The total population that did not report was, according to the census of 1890, 21,584. In 1891 the non-reporting population was 39,673. In many of the townships having very small populations it is not unlikely that no deaths occurred during the year, and hence only the negligence of the supervisors to state that fact to the county clerks brings them in this list of delinquents.

Table 67.—*List of townships from which it was reported that no deaths occurred in 1892, showing population in 1890.*

County.	Township.	Population, 1890.	County.	Township.	Population, 1890.
Alcona	Mitchell	88	Mackinac	Marquette	310
Alger	Rock River	328		Portage	171
Alpena	Sanborn	204	Marquette	Negaunee	333
Bay	Garfield	147		Richmond	1,132
	Mt. Forest*			Turin	100
Charlevoix	Bear Lake	190	Mason	Hamlin	85
	Hudson	118	Mecosta	Fork	570
Cheboygan	Ellis	159	Midland	Greendale	151
	Forest	161	Missaukee	Bloomfield	159
Clare	Redding*		Montmorency	Hillman	535
	Summerfield	147		Montmorency	177
Crawford	Maple Forest	316		Rust	203
Delta	Fairbanks	740	Muskegon	Laketon	2,204
	Sack Bay	186	Newaygo	Beaver	409
	Wells*			Croton	706
Dickinson	Breen	138		Monroe	1,066
Emmet	Carp Lake	236		Norwich	910
	Eggleston	140	Ontonagon	Carp Lake	18
	Littlefield	343		Greenland	272
Gladwin	Tobacco	196	Oscoda	Greenwood	131
	Buckeye	581		Mentor	607
	Gladwin	683		Mt. Pindus	107
Gogebic	Marenisco	225	Otsego	Charlton	149
Houghton	Laird	159	Ottawa	Robinson	510
Iron	Bates	594	Presque Isle	Allis	223
Kalkaska	Glade	183		Bismarck	113
Keweenaw	Houghton	189		Metz	267
Lake	Cherry Valley	301		Presque Isle	219
	Lake	59	Roscommon	Denton	75
Lapeer	Rich	1,218		Gerrish	66
Leelanaw	Centreville	927		Markey	28
Luce	Pentland	347		Richfield	76
			St. Clair	Fort Gratiot	774
Total population of townships reporting "No deaths"					22,154

* Not formed at time of census, 1890.

Table 68.—*List of townships from which no returns of deaths were received for 1892, showing population in 1890.*

County.	Township.	Population, 1890.	County.	Township.	Population, 1890.
Arenac	Turner	48	Manitou	Peaine	383
Baraga	Arvon	209		South Manitou	74
Benzie	Weldon	97	Menominee	Nadeau ‖	1,525
Chippewa	Pickford ‖	993	Montcalm	Day	1,787
	Trout Lake	112	Oceana	Otto	157
	White Fish	251	Ogemaw	Beaver Lake	284
Clare	Franklin	545		Foster	167
	Hamilton	508		Hill	47
Crawford	Blaine	51		Klacking	291
	Center Plains	202		Logan	59
	Frederick	260		Mills	66
	Grove	204		Rose	211
	South Branch	106	Ontonagon	Bohemia	92
Gladwin	Bentley *			Ontonagon	1,564
	City of Gladw'n	908	Otsego	Otsego Lake	641
Grand Traverse	Acme *		Sanilac	Moore	883
Gratiot	Ithaca	1,768	Schoolcraft	Germfask †	148
Iosco	Burleigh	443		Inwood *	
	Grant	149		Thompson	931
	Reno	358	Wayne	Huron §	1,960
	Wilber	299	Wexford	Antioch	470
Livingston	Marion ‡	1,146			
	Putnam	1,242			
Total population of delinquent townships					21,584

* Not formed at time of census, 1890.
† Returns received too late for compilation in this report.
‡ No enumeration on account of death of supervisor.
§ Supervisor states that return was made to the county clerk.
‖ Supervisor does not remember whether any deaths occurred or not.

SECTION II.—CAUSES OF DEATH IN MICHIGAN DURING THE YEAR 1892.

The tables in this section of the report are designed to exhibit the particulars in regard to the mortality in Michigan for the year 1892 with especial reference to the individual causes of death, so far as the returns afford information on this point. It is well ascertained that not all of the deaths that annually occur in Michigan are enumerated by the supervisors. It has been estimated that should the number of deaths actually returned be increased by 60 per cent of itself, the result would probably not exceed the actual number of deaths that occurred. This percentage of omissions is known to be somewhat irregularly distributed through the year, the early months most distant from the date of enumeration being the most deficient. It is evident that the individual causes of death share in this deficiency of enumeration, and, on the average, each should be increased by about the same percentage as total deaths in order to give the entire number of deaths. Certain diseases, as cholera infantum, whose incidence is mostly in the latter months of the year, are more fully returned than others, like measles or scarlet fever, which occur chiefly in the spring.

The original statements of the causes of death are made by the supervisors or assessors on the authority of the families or friends of the deceased persons, and are not based, as a rule, upon the death-certificates of the medical attendants. A very large percentage of deaths is returned with the cause of death entirely unspecified or stated to be "unknown," while many of the specified causes included in the tables are so indefinite as to afford no accurate information in regard to the diseases that caused death. Such are the deaths returned as due to "lung trouble," "brain difficulty," "kidney complaint," "heart failure" (no less than 368 of these in 1892, few of which were probably actual heart disease), "convulsions," "dropsy" of various organs, "fever" (unspecified as to its nature), "old age," "debility," etc., etc. The best that can be done with such statements is to classify such of them as admit of it under the organ affected, and to remember that the deaths reported from definitely specified causes would be increased somewhat if the nature of the diseases included in these indefinite returns could be ascertained.

The present system of enumeration of deaths in Michigan not only fails to obtain a large percentage of the deaths that actually occur, and to state definitely the causes of death in the cases of a large number of those decedents that are returned, but even the definite statements made by the enumerators are open to more or less question. They have no medical knowledge, as a class, and are not able to intelligently scrutinize the statements made to them by interested parties,—the families or friends of decedents. In many cases the facts required are not definitely remembered by the family; the physician's diagnosis is misunderstood or forgotten, and a worthless or misleading statement is made. The remedy for these defects in the present registration law is a very simple one, and one that is already in practical operation in many cities of the State under local regulations (see Part V), namely, the requirement of a certificate of death from the medical attendant and the issue of a permit for burial or for the removal of the body in the case of every death that occurs in this State, city and country alike. Without such permit from the township, village or city authority empowered to issue the same, no burial or removal for burial in another State should be permitted under strict penalties.

The most important causes of death from a practical standpoint are those that the State Board of Health is endeavoring to restrict,—the "communicable diseases dangerous to the public health" as defined by law. Especial prominence is given to these in the tables in this section of the report, and in the following summary the numbers and percentages to total deaths from all specified diseases are stated for the leading ones:—

SUMMARY OF REGISTRATION OF CAUSES OF DEATH, 1892.*

Deaths from all causes,	**21,729**
Death-rate per 100,000 estimated population,	**994.3**
(Actual number of deaths from all causes, estimated at,	**34,766**
Actual death-rate, all causes, per 100,000 population estimated at,	**1,590.9)**

In the above statement of deaths from all causes, still-births are included to the number of 1,014. Excluding these, as is customary in most mortality reports, we have:—

Deaths from all causes, still-births excluded,	**20,715**
Death-rate per 100,000, still-births excluded,	**947.9**

Excluding deaths from violence (accidental, 1,020; suicidal, 107; homicidal, 17; see Table 82 for full particulars in regard to this class), 1,144; still-births (see Table 22, *et seq.*, Part II), 1,014; premature births, 78; and deaths of which the causes were unknown or unspecified, 1,915, we have:—

Deaths from specified diseases,	**17,578**

Even this number contains many deaths the causes of which are practically unspecified, as "old age," "debility," etc., but such deaths can be certainly ascribed to disease. The total thus obtained makes a more satisfactory basis of reference for stating the proportion of deaths from any specified cause than the grand total inclusive of deaths from violence, still-births, and "unknown" causes. Thus we have:—

Deaths from communicable diseases dangerous to the public health,	**5,029 or 28.6 per cent.**

This number includes only those at present so defined by the State Board of Health. It will probably eventually include all specific infectious diseases. The principal diseases now included are:—

Consumption,	**2,080**	**or 11.8**	**per cent.**
Diphtheria and croup,	**1,311**	**" 7.5**	**" "**
Typhoid fever,	**626**	**" 3.6**	**" "**
Scarlet fever,	**442**	**" 2.5**	**" "**
Whooping-cough,	**147**	**" .8**	**" "**
Measles,	**72**	**" .4**	**" "**

Certain diseases and groups of diseases of special importance are:—

Cancer,	**558**	**or 3.2**	**per cent.**
Influenza,	**907**	**" 5.2**	**" "**
Pneumonia,	**1,298**	**" 7.4**	**" "**
Lung diseases (including pneumonia and consumption),	**3,845**	**" 21.9**	**" "**
Bowel diseases,	**1,631**	**" 9.3**	**" "**
Brain diseases,	**1,534**	**" 8.7**	**" "**
Heart diseases (not including "heart failure,")	**961**	**" 5.5**	**" "**

* See summary of registration of deaths (occurrence by months, sex, age, color and nativity of decedents) on p. 105.

PRELIMINARY REMARKS ON TABLES OF CAUSES OF DEATH.

The following tables are arranged to show as clearly as possible the facts concerning the causes of death *as returned;* it is impracticable to attempt to apply any graduated correction in order to bring out more clearly the relations of the mortality from various diseases to meteorological conditions in the several months, or to attempt to estimate the actual numbers of deaths from different diseases, the factor of correction being variable, as already stated, owing to the different distribution of different diseases through the year. All subsequent statements must be taken with some allowance, it being understood that they are true only so far as our present returns may be depended upon.

In Table 69 the relative numbers of deaths of each sex from the diseases included may be considered as approximately correct upon the hypothesis that the deaths returned are fairly representative of the whole number that occurred. So, also, the distribution of the deaths from each cause by periods of age of decedents, as given in this table, is probably reliable. The distribution of deaths by months is not reliable, the early months of the year being not so completely returned as the latter months. In Table 70 the relative numbers of deaths from each disease to total deaths from disease in each county may be accepted, with some reservations on account of more careful enumeration of causes of death in certain localities. Thus, in counties containing cities in which burial permits are required, the use of such permits by the assessors in making their returns would lead to more accurate results than where the returns are based on the ordinary enumeration. The total numbers of deaths from all causes and from each specified cause are far below the truth in all of the tables in this and in all previous reports. Comparisons may, nevertheless, be made with previous years (as in Table 71) and much information of value be obtained in regard to the variations in the death-rates of different diseases from year to year on the assumption that the percentage of omissions has remained fairly constant. But any direct comparisons of the deaths returned in Michigan with those returned in other States in which systems of accurate registration of vital statistics are in force, are inadmissible.

In the synopsis on the opposite page, the tables in this section will be seen to be divided into two groups:—(1) tables relating to the important diseases returned as causes of death for the year; and (2) deaths from violence. An important feature of Tables 69 and 70 is that they present the deaths from important diseases by sex, months of death and periods of age of decedents, and also as distributed among the counties of the State, according to a single system of classification. In previous reports a double arrangement has been used, Dr. Farr's original system for the table showing distribution by counties, and an alphabetical list for sex, months and ages. This caused discrepancies to appear in the statements made in different tables of the same report in regard to the mortality from various diseases, and rendered advisable the adoption of some simpler system, as exemplified in Tables 69 and 70, in which the same term should always refer to the same disease.

It is well settled that tables of mortality should show not only the total number of deaths from each disease in each month and age-period, but should also show it with distinction of sex. Table 69 is not theoretically complete in this respect, but is left intentionally so for the sake of greater compactness, and because these statements by sex may be found in the old alphabetical list (Table 90), which is retained for the purpose of comparison with previous years.

Table 71 has been condensed from the alphabetical lists given in the registration reports for the years 1873, 1879, 1885 and 1891, and will be found more valuable for comparison in some respects than the table given in the last report for a series of years, that being based upon the nosological arrangement of each year. The inclusion of terms in these tables, together with some discussion of their contents, will be found in the text beginning on page 184.

Synopsis of tables relating to causes of death.

Table.	Causes of death in Michigan, 1892.
	A.—*Diseases returned as causes of death, 1892.*
69.	**Important diseases returned as causes of death in Michigan during the year 1892, by sex, months of death and periods of age.**
70.	**Important diseases returned as causes of death in Michigan during the year 1892, by counties.**
71.	**Important diseases returned as causes of death in Michigan for each of the years 1869-92, inclusive.**
72.	Geographical divisions of the State used in the study of the distribution of causes of death. Accompanied by map.
73.	Deaths from "old age" and deaths of persons aged under 5 years and over 70 years, by geographical divisions. 1892.
	Certain important diseases returned as causes of deaths in 1892, by geographical divisions:—
74.	Consumption, pneumonia, influenza, diphtheria, croup, scarlet fever, typhoid fever and diarrheal diseases.
75.	Deaths from cancer returned for the year 1892 and for the twenty years, 1872-91, specifying sex and organs affected. With note on deaths from "tumor," 1892.
	Comparative mortality of Michigan and other States.
76.	Comparative mortality from all causes in Michigan and in certain States and foreign countries for the years 1880-92, inclusive. Diagram.
77.	Comparative mortality from certain specified causes of death in Michigan, Massachusetts and England, by five-year periods, 1871-90.
78.	Comparative mortality from consumption in Michigan, certain other States and England for the years 1880-92.
79.	Comparative mortality from diphtheria and croup in Michigan, certain other States and England for the years 1880-92.
80	Comparative mortality from typhoid fever in Michigan, certain other States and England for the years 1880-92.
81.	Comparative mortality from scarlet fever in Michigan, certain other States and England for the years 1880-92.
	B.—*Deaths from violence, 1892.*
82.	**Deaths from violence in Michigan during the year 1892, classified.**
83.	**Deaths from violence in Michigan in 1892, by counties.**
84.	Deaths from suicide in Michigan, 1874-92, showing months of death, sex and civil condition of decedents.
85.	Deaths from suicide in Michigan, 1874-92, showing (*a*) occupations; (*b*) nativities; and (*c*) means of death used.
	Old classified and alphabetical tables of causes of death.
86.	Number and per cent of deaths returned from each class of causes (Dr. Farr's classification), 1890-92; with average for ten years, 1882-91.
87.	Number of deaths returned from each class of causes for each month of the year 1892.
88.	Deaths by geographical divisions:—Number and rate per 1,000 population, and percentage of each class of causes to total deaths from all causes for each division of the State, 1892.
89.	Causes of death in Michigan, 1871-92:—*Classified Arrangement* (Dr. Farr's) comparing the deaths returned and death-rates per 100,000 population from each cause, order and class in 1892 with the corresponding figures for 1891, and for the five-year periods 1871-75, 1876-80, 1881-85, 1886-90.
90.	Causes of death in Michigan, 1887-92:—*Alphabetical List* of causes of death as returned, showing months of death and periods of age of decedents, by sex, for 1892, and total deaths from each cause, by sex, for the years 1887-91.

Table 69.—*Important diseases and groups of diseases returned as causes of death in decedents from*

Line number.	Causes of death, 1892.	Total deaths, 1892.	Sex.			Months of death, 1892.												
			Males.	Females.	Unknown.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
1	TOTAL DEATHS	21,729	11,837	9,809	83	2,152	1,687	1,734	1,879	1,700	1,481	1,678	1,942	1,802	1,892	1,788	1,949	45
2	SPECIFIED DISEASES.	17,578	9,173	8,396	9	1,839	1,418	1,386	1,542	1,380	1,155	1,312	1,533	1,456	1,551	1,424	1,557	25
3	*Dangerous Communicable Diseases*	*5,029*	*2,510*	*2,517*	*2*	*371*	*342*	*396*	*461*	*457*	*402*	*370*	*400*	*409*	*462*	*464*	*486*	*9*
4	Consumption	2,080	969	1,111	..	177	151	173	187	199	190	167	179	164	177	143	169	4
5	*Other tubercular diseases*	*208*	*99*	*109*	..	7	*17*	*11*	*18*	*26*	*18*	*22*	*26*	*14*	*21*	*17*	*11*	..
6	Marasmus	109	56	53	..	2	9	5	7	17	13	13	17	5	10	9	2	..
7	Meningitis, Tuberc.	33	14	19	..	3	1	1	5	3	1	2	3	2	4	3	5	..
8	Scrofula	17	7	10	..	....	3	2	1	....	....	....	1	5	2	2	1	..
9	Tabes mesenterica	37	17	20	..	1	4	2	5	5	3	6	3	....	5	2	1	..
10	Other forms of tuberculosis	12	5	7	..	1	....	1	....	1	1	1	2	2	....	1	2	..
11	Croup	211	127	83	1	23	18	11	20	13	12	11	17	13	18	25	30	..
12	Croup, Membranous	80	42	38	..	8	6	11	7	5	1	2	3	8	7	15	7	..
13	Diphtheria	1,020	525	495	..	48	57	71	94	98	73	61	54	67	99	143	152	3
14	Erysipelas	64	38	26	..	5	7	8	6	5	9	3	3	5	3	4	6	..
15	Fever, Puerperal	42	.....	42	..	6	2	7	3	5	6	2	3	2	....	5	1	..
16	Fever, Scarlet	442	209	233	..	42	39	47	49	51	40	26	33	30	22	18	45	..
17	Fever, Typhoid	626	372	253	1	41	26	36	44	34	31	48	60	77	98	81	50	..
18	Fever, Typho-malarial	23	9	14	..	1	1	....	....	1	1	2	4	5	6	1	1	..
19	Fever, Typhus	6	3	3	..	....	....	1	1	....	....	1	1	1	....	....	1	..
20	Glanders	1	1	.....	..	....	....	....	....	....	....	....	....	1	....	....	....	..
21	Measles	72	36	36	..	4	6	10	19	8	7	1	1	5	3	4	2	2
22	—German (Rötheln)	2	2	.....	..	....	....	1	....	....	1	....	....	....	....	....	....	..
23	Small-pox	1	1	.....	..	....	....	....	....	1	....	....	....	....	....	....	....	..
24	Chicken-pox	4	3	1	..	1	1	....	....	....	....	....	....	....	1	....	1	..
25	Whooping-cough	147	74	73	..	8	11	9	13	11	13	24	16	17	7	8	10	..
26	*Bladder diseases*	*50*	*47*	*3*	..	*2*	*8*	*4*	*5*	*5*	*2*	*2*	*5*	*1*	*8*	*5*	*3*	..
27	Calculus	11	11	.....	..	....	1	1	2	1	1	1	1	....	2	1	....	..
28	Cystitis	22	19	3	..	2	5	1	3	1	....	1	2	1	2	3	1	..
29	Bladder disease, etc.	17	17	.....	..	....	2	2	....	3	1	....	2	....	4	1	2	..
30	*Bowel diseases*	*1,631*	*864*	*765*	*2*	*65*	*52*	*70*	*85*	*64*	*78*	*213*	*351*	*275*	*200*	*101*	*75*	*2*
31	Bowels, Inflammation of	334	168	165	1	18	20	32	42	21	25	27	29	34	27	29	30	..
32	Diarrhea	277	152	125	..	8	3	9	4	7	12	52	83	55	28	12	4	..
33	Cholera infantum	606	329	277	..	7	9	10	15	14	22	101	171	138	89	21	8	1
34	Dysentery	74	34	39	1	2	....	1	1	1	1	4	25	14	18	5	2	..
35	Peritonitis	89	34	55	..	13	7	5	13	6	4	7	6	5	8	10	5	..
36	Bowel disease, etc.	251	147	104	..	17	13	13	10	15	14	22	37	29	30	24	26	1

NOTE.—The arrangement of causes of death is uniform in Tables 69, 70 and 71. For explanation of the terms used, their inclusion and relation to the classifications formerly employed in these reports, see text beginning on page 134, to which reference may be made by line numbers.

Michigan during the year 1892, showing sex, months of death and periods of age of each cause.

Ages of decedents, by five-year periods, 1892.																	
Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.	Line number.
7,295	967	526	770	949	890	808	725	628	723	726	819	942	1,074	1,126	1,006	1,330	425	1
4,862	864	461	672	786	739	675	624	541	634	640	753	859	983	1,048	958	1,281	198	2
1,438	*590*	*269*	*378*	*442*	*383*	*285*	*229*	*175*	*154*	*133*	*141*	*92*	*106*	*84*	*54*	*24*	*52*	3
84	22	41	212	273	282	207	178	129	122	110	113	70	85	64	41	18	29	4
151	*3*	*2*	*4*	*9*	*6*	*5*	*5*	*4*	*3*	*2*	*3*	*1*	*3*	*1*	*2*	.....	*4*	5
106	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	6
28	1	.....	.....	.....	1	.....	.....	1	.....	.....	1	.....	1	.....	.....	.....	.....	7
9	1	1	1	.....	.....	.....	.....	2	.....	1	.....	1	.....	.....	1	.....	.....	8
5	1	1	2	7	4	3	3	1	3	1	2	.....	.....	1	1	.....	2	9
3	.....	.....	1	2	1	2	1	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	10
171	34	3	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	11
54	24	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12
419	360	149	45	21	12	2	1	3	2	2	.....	.....	.....	1	.....	.....	3	13
15	1	.....	.....	1	2	.....	3	.....	6	4	9	8	3	5	5	2	.....	14
.....	.....	.....	2	11	7	10	5	5	.....	.....	.....	.....	.....	.....	.....	.....	2	15
287	111	25	7	3	.....	3	1	1	.....	.....	.....	.....	.....	.....	.....	.....	4	16
49	25	45	101	117	71	52	33	31	19	14	13	13	14	11	6	4	8	17
2	1	2	2	2	3	2	1	2	2	1	1	.....	1	1	.....	.....	.....	18
.....	.....	1	2	2	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	19
.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20
58	5	.....	2	2	.....	2	1	.....	.....	.....	1	.....	.....	1	.....	.....	.....	21
1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22
.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	23
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24
143	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25
3	.....	*1*	.....	*1*	*1*	*1*	.....	*1*	*2*	.....	*1*	*6*	*8*	*11*	*7*	*6*	*1*	26
.....	.....	1	.....	.....	.....	.....	.....	1	1	.....	.....	2	1	2	2	1	.....	27
3	.....	.....	.....	.....	.....	1	.....	.....	1	.....	1	3	2	7	2	2	.....	28
.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	1	5	2	3	3	1	29
1,118	*44*	*30*	*30*	*39*	*34*	*45*	*34*	*18*	*34*	*22*	*37*	*27*	*43*	*32*	*18*	*18*	*8*	30
135	19	15	17	20	16	19	14	9	12	7	11	8	13	8	6	3	2	31
225	5	.....	.....	3	1	4	2	1	2	5	6	6	4	5	4	4	.....	32
599	3	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	33
47	1	.....	1	.....	.....	.....	1	1	1	3	2	1	3	3	2	6	2	34
7	6	8	4	8	10	15	11	2	8	2	4	1	2	.....	1	.....	.....	35
105	10	5	8	8	7	7	6	5	11	5	14	11	21	16	5	5	2	36

Table 69.—CONCLUDED.—*Important diseases returned as causes of*

Line number.	Causes of death, 1892.	Total deaths, 1892.	Sex.			Months of death, 1892.											
			Males.	Females.	Unk.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Unk.
37	*Brain diseases*	*1,534*	*886*	*648*	..	*132*	*95*	*120*	*147*	*114*	*105*	*136*	*147*	*135*	*143*	*107*	*151*	*2*
38	Apoplexy	219	117	102	..	23	5	14	15	15	16	18	24	20	20	21	28	..
39	Brain, Congestion of	68	38	30	..	4	4	5	6	6	6	6	9	6	7	2	7	..
40	Brain, Inflammation of	292	174	118	..	22	19	23	31	28	21	31	28	25	28	20	15	1
41	Epilepsy	62	41	21	..	6	4	4	11	1	3	6	8	7	5	1	6	..
42	Meningitis	148	87	61	..	13	11	14	13	13	4	19	19	13	6	7	16	..
43	Paralysis	571	324	247	..	53	37	44	54	40	38	45	47	50	56	40	66	1
44	Brain disease, etc.	174	105	69	..	11	15	16	17	11	17	11	12	14	21	16	13	..
45	Cancer	558	246	312	..	44	31	35	40	50	48	34	60	43	54	61	58	..
46	Tumor	139	36	103	..	12	15	13	9	10	13	6	7	11	14	12	17	..
47	Childbirth	244	.....	244	..	20	21	19	27	19	26	20	12	17	19	13	31	..
48	Convulsions	548	321	225	2	52	46	49	48	55	41	47	53	46	30	30	51	..
49	Diabetes	69	38	31	..	8	5	6	3	6	5	1	2	7	6	9	11	..
50	Dropsy	389	179	210	..	17	27	25	38	28	34	35	34	32	29	39	51	..
51	Fever	129	64	65	..	7	4	10	10	7	7	7	14	13	26	8	15	1
52	Fever, Malarial	146	73	73	..	5	6	7	15	11	8	12	20	19	13	18	12	..
53	*Heart diseases*	*1,329*	*716*	*612*	*1*	*120*	*101*	*108*	*125*	*129*	*86*	*97*	*94*	*90*	*123*	*131*	*124*	*1*
54	Pericarditis	97	52	45	..	6	3	6	5	15	11	8	11	8	2	8	14	..
55	Heart disease, etc.	864	469	395	..	69	74	75	81	81	55	62	56	60	83	90	77	1
56	"Heart failure"	368	195	172	1	45	24	27	39	33	20	27	27	22	38	33	33	..
57	Influenza	907	478	429	..	351	209	99	58	35	24	18	19	17	19	30	28	..
58	*Kidney diseases*	*442*	*323*	*119*	..	*41*	*41*	*35*	*32*	*43*	*32*	*31*	*33*	*34*	*40*	*39*	*41*	..
59	Kidneys, Inflammat'n of	332	241	91	..	35	30	27	27	30	27	24	20	26	29	27	30	..
60	Kidney disease, etc.	110	82	28	..	6	11	8	5	13	5	7	13	8	11	12	11	..
61	Liver disease, etc.	121	54	67	..	9	9	10	12	15	12	9	10	8	11	9	7	..
62	*Lung diseases*	*1,765*	*1,009*	*756*	*1*	*353*	*209*	*174*	*177*	*134*	*90*	*80*	*66*	*87*	*106*	*131*	*156*	*2*
63	Asthma	65	39	26	..	12	6	5	7	4	5	4	2	4	7	3	6	..
64	Bronchitis	184	103	81	..	25	16	21	23	17	8	6	11	12	11	19	15	..
65	Pleurisy	30	17	13	..	7	3	4	2	3	1	.....	.....	2	2	5	1	..
66	Pneumonia	1,298	736	561	1	285	168	122	133	91	66	60	43	50	71	91	116	2
67	Lungs, Congestion of	87	48	39	..	17	9	10	4	6	3	3	3	6	7	9	10	..
68	Lung disease, etc.	101	65	36	..	7	7	12	8	13	7	7	7	13	8	4	8	..
69	Rheumatism	149	76	73	..	15	13	9	15	18	8	11	12	13	12	11	12	..
70	Septicæmia	167	80	87	..	15	18	18	18	15	7	11	15	9	16	7	18	..
71	Spine disease, etc.	94	48	46	..	4	4	7	7	13	11	4	4	15	9	8	8	..
72	*Stomach diseases*	*178*	*97*	*81*	..	*16*	*10*	*15*	*18*	*9*	*8*	*10*	*25*	*21*	*17*	*10*	*19*	..
73	Stomach, Inflammat'n of	53	27	26	..	6	5	5	8	4	.....	5	8	5	1	1	5	..
74	Stomach disease, etc.	125	70	55	..	10	5	10	10	5	8	5	17	16	16	9	14	..
75	Syphilis	11	7	4	..	1	1	.....	3	.....	1	1	.....	1	.....	2	1	..
76	*Unclassified*	1,949	1,022	926	1	179	151	157	189	143	107	157	150	153	194	179	182	8

death in Michigan, 1892, by sex, months of death and periods of age.

Ages of decedents, by five-year periods, 1892.																		Line number.
Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unk.	
367	*57*	*26*	*48*	*31*	*26*	*37*	*51*	*44*	*64*	*61*	*78*	*125*	*135*	*130*	*119*	*114*	*21*	37
3	1	----	2	3	2	2	7	5	15	19	24	32	33	25	22	20	4	38
36	2	2	5	5	3	1	2	1	6	------	1	1	------	1	2	------	----	39
194	28	8	13	6	3	9	1	7	4	7	3	1	3	------	2	2	1	40
7	1	2	5	10	4	6	7	1	5	3	1	3	2	2	1	1	1	41
91	16	10	10	1	2	3	3	1	------	2	2	2	------	2	------	------	3	42
11	2	1	6	3	7	7	14	15	24	22	34	68	83	90	87	87	10	43
25	7	3	7	3	5	9	17	14	10	8	13	18	14	10	5	4	2	44
4	1	2	2	4	7	13	24	33	54	70	83	68	59	65	32	33	4	45
7	4	2	1	6	11	13	12	14	12	6	12	13	6	7	6	4	3	46
------	----	----	19	49	53	43	46	25	4	1	------	------	------	------	------	------	4	47
501	10	6	2	4	4	5	2	2	------	2	1	------	------	1	1	1	6	48
1	6	8	5	1	2	1	2	2	------	8	8	4	7	6	5	2	1	49
16	10	5	8	8	12	6	15	17	23	22	33	41	58	46	34	31	4	50
46	3	6	9	15	11	4	5	5	4	1	1	6	3	2	2	1	5	51
35	14	8	13	8	12	13	7	7	5	2	6	5	4	2	3	1	1	52
62	*15*	*21*	*34*	*34*	*30*	*43*	*46*	*56*	*81*	*88*	*118*	*146*	*166*	*172*	*112*	*84*	*21*	53
3	2	2	----	----	2	3	3	3	6	6	11	8	20	14	5	6	3	54
40	8	16	30	26	21	25	26	44	51	59	80	98	108	102	73	43	14	55
19	5	3	4	8	7	15	17	9	24	23	27	40	38	56	34	35	4	56
125	12	13	19	15	16	16	30	30	26	48	36	66	86	99	135	130	5	57
14	*10*	*3*	*6*	*23*	*18*	*19*	*16*	*15*	*23*	*28*	*34*	*52*	*49*	*51*	*39*	*35*	*8*	58
7	7	2	6	18	14	13	14	13	15	23	25	42	41	38	29	19	6	59
7	3	1	----	5	4	6	2	2	8	5	9	10	7	13	10	16	2	60
6	4	----	1	3	3	6	5	5	15	8	13	16	20	7	6	2	1	61
625	*47*	*25*	*57*	*51*	*60*	*61*	*46*	*40*	*67*	*66*	*92*	*110*	*113*	*114*	*82*	*89*	*20*	62
------	----	----	----	----	1	------	------	2	2	4	6	13	6	13	11	7	----	63
114	3	----	----	4	4	4	4	1	3	2	6	7	5	11	6	7	3	64
6	----	1	----	1	1	2	1	1	4	------	2	3	2	2	----	2	2	65
436	35	22	53	41	48	46	33	32	50	48	69	80	89	76	61	65	14	66
41	3	----	1	2	2	2	3	1	4	4	5	3	7	3	1	4	1	67
28	6	2	3	3	4	7	5	3	4	8	4	4	4	9	3	4	----	68
4	6	12	7	4	6	7	4	6	11	9	11	17	14	14	9	4	4	69
19	4	3	7	14	20	17	11	8	11	9	7	3	11	9	10	2	2	70
46	10	5	6	3	3	3	------	3	1	2	1	4	3	2	1	1	----	71
37	----	*3*	*2*	*5*	*1*	7	*9*	*6*	*14*	*12*	*10*	*20*	*18*	*17*	*11*	*6*	----	72
9	----	3	----	2	1	3	2	2	4	4	2	6	5	5	4	1	----	73
28	----	----	2	3	------	4	7	4	10	8	8	14	13	12	7	5	----	74
4	----	----	----	1	2	------	------	------	------	1	1	2	------	------	------	------	----	75
384	17	13	18	25	24	30	30	29	29	41	29	36	75	177	272	868	27	76

Table 70.—*Important diseases and groups of diseases returned as causes of*

Line number.	Causes of death, 1892.	State.	Counties—Alcona.	Alcona.	Alger.	Allegan.	Alpena.	Antrim.	Arenac.	Baraga.	Barry.	Bay.	Benzie.	Berrien.	Branch.	Calhoun.	Cass.	Charlevoix.	Cheboygan.
1	TOTAL DEATHS	21,729	40	10	356	154	87	51	41	164	594	53	314	255	409	175	75	110
2	SPECIFIED DISEASES	17,578	27	6	302	96	70	40	36	132	456	39	255	238	341	156	53	83
3	*Dangerous Communicable Diseases*	*5,029*	*7*	..	*74*	*31*	*15*	*21*	*14*	*28*	*169*	*13*	*52*	*52*	*75*	*41*	*7*	*30*
4	Consumption	2,080	1	..	29	8	4	8	6	17	43	11	26	29	49	28	5	4
5	*Other tubercular diseases*	*208*	..	..	*1*	....	*4*	....	....	....	*2*	....	*1*	....	*2*	....	..	....
6	Marasmus	109	..	..	....	....	....	....	....	....	....	....	....	....	....	....	..	....
7	Meningitis, Tuberc.	33	..	..	....	....	2	....	....	....	1	....	1	....	....	....	..	....
8	Scrofula	17	..	..	....	....	....	....	....	....	1	....	....	....	....	....	..	....
9	Tabes mesenterica	37	..	..	1	....	2	....	....	....	....	....	....	....	2	....	..	....
10	Other forms of tuberculosis	12	..	..	....	....	....	....	....	....	....	....	....	....	....	....	..	....
11	Croup	211	1	..	1	6	....	1	....	....	9	....	4	....	5	....	..	3
12	Croup, Membranous	80	..	..	3	....	2	....	....	1	14	....	1	....	....	....	..	....
13	Diphtheria	1,020	3	..	17	12	....	10	....	6	71	....	6	9	2	5	..	20
14	Erysipelas	64	..	..	....	....	....	....	....	....	2	1	....	....	2	1	..	1
15	Fever, Puerperal	42	1	..	1	....	....	....	....	....	....	....	....	1	3	....	..	....
16	Fever, Scarlet	442	1	..	7	2	1	....	1	....	9	....	1	....	....	1	2	....
17	Fever, Typhoid	626	..	..	8	....	....	1	7	4	12	....	10	5	11	5	..	2
18	Fever, Typho-malarial	23	..	..	....	....	....	....	....	....	3	....	....	3	....	....	..	....
19	Fever, Typhus	6	..	..	....	....	1	....	....	....	....	....	....	1	....	1	..	....
20	Glanders	1	..	..	....	....	1	....	....	....	....	....	....	....	....	....	..	....
21	Measles	72	..	..	....	3	2	1	....	....	2	....	....	4	....	....	..	....
22	—German (Rötheln)	2	..	..	1	....	....	....	....	....	....	....	....	....	....	....	..	....
23	Small-pox	1	..	..	....	....	....	....	....	....	....	....	....	....	....	....	..	....
24	Chicken-pox	4	..	..	....	....	....	....	....	....	....	....	....	....	....	....	..	....
25	Whooping-cough	147	..	..	6	....	....	....	....	....	2	1	3	....	1	....	..	....
26	*Bladder diseases*	*50*	..	..	*2*	....	....	....	....	....	....	....	*1*	....	*1*	*1*	..	....
27	Calculus	11	..	..	....	....	....	....	....	....	....	....	....	....	1	....	..	....
28	Cystitis	22	..	..	1	....	....	....	....	....	....	....	1	....	....	1	..	....
29	Bladder disease, etc.	17	..	..	1	....	....	....	....	....	....	....	....	....	....	....	..	....
30	*Bowel diseases*	*1,631*	*3*	..	*21*	*13*	*10*	*2*	*3*	*18*	*61*	*4*	*16*	*9*	*24*	*17*	*11*	*14*
31	Bowels, Inflammation of	334	1	..	8	3	4	....	....	3	10	....	2	....	5	4	2	2
32	Diarrhea	277	..	..	1	5	....	....	3	1	10	....	....	2	1	....	.	3
33	Cholera infantum	606	2	..	6	3	2	....	....	9	34	4	7	3	4	6	9	8
34	Dysentery	74	..	..	1	....	1	....	....	2	3	....	....	....	....	1	..	....
35	Peritonitis	89	..	..	1	....	....	1	....	1	....	....	3	....	7	1	..	....
36	Bowel disease, etc.	251	..	..	4	2	3	1	....	3	4	....	4	4	7	5	..	1

NOTE.—The arrangement of causes of death is uniform in Tables 69, 70 and 71. For explanation of the terms used, their inclusion and relation to the classifications formerly employed in these reports, see text *beginning on page* 134, to which reference may be made by line numbers.

death in Michigan during the year 1892, showing their distribution by counties.

to Keweenaw.

Chippewa.	Clare.	Clinton.	Crawford.	Delta.	Dickinson.	Eaton.	Emmet.	Genesee.	Gladwin.	Gogebic.	G'd Traverse.	Gratiot.	Hillsdale.	Houghton.	Huron.	Ingham.	Ionia.	Iosco.	Iron.	Isabella.	Jackson.	Kalamazoo.	Kalkaska.	Kent.	Keweenaw.	Line number.
98	45	241	23	141	194	288	64	407	13	456	136	188	323	552	225	386	265	168	62	116	490	433	48	1,321	52	1
64	38	210	20	94	123	249	44	351	10	170	115	152	294	403	173	335	226	131	45	92	443	385	41	1,085	49	2
18	*9*	*37*	*7*	*31*	*45*	*54*	*18*	*95*	*1*	*77*	*23*	*33*	*66*	*142*	*48*	*69*	*38*	*41*	*19*	*28*	*106*	*66*	*6*	*299*	*18*	3
11	4	19	4	17	14	42	14	49	..	13	19	19	42	31	30	40	30	10	7	16	54	39	3	124	4	4
1	..	*2*	..	*2*	*1*	....	....	*3*	..	*1*	*2*	*2*	*3*	*5*	*4*	*4*	....	....	....	....	*3*	*2*	..	*18*	*4*	5
....	..	....	..	2	....	....	....	....	..	....	....	....	....	2	....	....	....	....	....	....	.....	....	..	7	4	6
1	..	1	..	....	....	....	....	1	..	1	....	....	1	3	1	1	....	....	....	....	1	....	..	2	....	7
....	..	....	..	....	....	....	....	1	..	....	....	....	....	.....	....	1	....	....	....	....	.....	1	..	7	....	8
....	..	1	..	....	1	....	....	1	..	....	2	2	2	.....	3	2	....	....	....	....	2	1	..	1	....	9
....	..	....	..	....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	.....	....	..	1	....	10
1	..	1	..	1	3	1	....	1	..	2	....	1	2	7	1	....	....	2	....	....	6	3	..	7	....	11
....	..	2	..	....	....	1	....	1	..	1	....	1	....	1	....	1	....	3	....	....	10	1	..	3	....	12
3	..	4	..	....	22	2	....	26	..	10	....	4	3	10	5	6	2	21	1	4	12	4	..	60	1	13
....	1	....	..	....	....	1	....	1	..	....	....	1	2	.....	1	1	1	....	....	1	.....	3	..	5	....	14
....	..	....	..	....	1	2	....	2	..	1	1	....	1	.....	....	1	....	....	1	....	.....	1	..	3	1	15
....	..	2	..	....	1	3	2	4	..	14	1	....	3	53	....	2	....	....	....	1	9	3	..	12	2	16
....	2	7	..	9	3	1	2	7	1	29	....	4	8	18	5	11	5	1	8	1	10	9	2	57	4	17
....	..	....	..	....	....	....	....	....	..	....	....	....	....	.....	....	....	....	....	....	....	1	....	..	2	....	18
....	..	....	..	1	....	....	....	....	..	....	....	....	....	.....	....	....	....	....	....	....	.....	....	..	....	....	19
....	..	....	..	....	....	....	....	....	..	....	....	....	....	.....	....	....	....	....	....	....	.....	....	..	....	....	20
....	2	....	..	1	....	....	....	1	..	3	....	....	2	2	....	2	....	....	....	....	.....	....	1	2	1	21
....	..	....	..	....	....	....	....	....	..	....	....	....	....	.....	....	1	....	....	....	....	.....	....	..	....	....	22
....	..	....	..	....	....	....	....	....	..	....	....	....	....	.....	....	....	....	....	....	....	.....	....	..	....	....	23
1	..	....	..	....	....	....	....	....	..	....	....	1	....	.....	....	....	....	....	....	....	.....	....	..	....	....	24
1	..	....	3	....	....	1	....	....	..	3	....	....	....	15	2	....	....	4	2	5	1	1	..	6	1	25
....	..	*2*	..	*1*	....	....	....	*3*	..	....	....	....	*1*	*2*	....	*2*	*1*	*1*	....	*1*	.....	*3*	..	*2*	....	26
....	..	....	..	....	....	....	....	....	..	....	....	....	....	1	....	....	....	....	....	....	.....	....	..	1	....	27
....	..	2	..	....	....	....	....	1	..	....	....	....	....	1	....	1	1	1	....	....	.....	3	..	1	....	28
....	..	....	..	1	....	....	....	2	..	....	....	....	1	.....	....	1	....	....	....	1	.....	....	..	....	....	29
6	*9*	*23*	..	*15*	*34*	7	*2*	*17*	..	*32*	*9*	*11*	*11*	*62*	*14*	*27*	*21*	*9*	*2*	*9*	*33*	*23*	*1*	*132*	*11*	30
....	1	9	..	3	3	3	1	3	..	5	2	1	....	13	5	3	1	2	....	....	6	1	1	30	2	31
....	..	....	..	4	....	....	....	....	..	4	....	3	2	16	5	....	2	....	....	....	4	2	..	39	5	32
5	6	10	..	6	31	1	1	7	..	8	5	2	5	6	4	16	13	4	2	7	7	7	..	27	1	33
....	1	1	..	....	....	....	....	1	..	13	1	2	1	2	....	....	1	....	....	....	2	5	..	5	....	34
....	..	....	..	....	....	....	....	....	..	1	....	....	2	.....	....	2	....	....	....	....	5	1	..	12	3	35
1	1	3	..	2	....	3	....	6	..	1	1	3	1	25	....	6	4	3	....	2	9	7	..	19	....	36

Table 70.—CONTINUED.—*Important diseases returned as*

Line number.	Causes of death, 1892.	State.	Counties—Alcona	Alger.	Allegan.	Alpena.	Antrim.	Arenac.	Baraga.	Barry.	Bay.	Benzie.	Berrien.	Branch.	Calhoun.	Cass.	Charlevoix.	Cheboygan.
37	*Brain diseases*	*1,534*	*4*	*1*	*28*	*11*	*7*	*2*	...	*16*	*27*	*5*	*17*	*34*	*32*	*14*	*4*	*1*
38	Apoplexy	219	1	...	...	...	...	...	...	5	3	1	...	8	12	2	2	...
39	Brain, Congestion of	68	...	...	4	...	1	...	...	1	2	1	1	1	...	...	...	...
40	Brain, Inflammation of	292	...	1	3	1	1	1	...	1	9	...	1	1	1	2	...	...
41	Epilepsy	62	...	...	1	...	1	...	...	...	2	...	...	2	2	...	...	...
42	Meningitis	148	...	...	8	4	...	1	...	2	1	1	2	1	...	...	...	1
43	Paralysis	571	2	...	8	5	3	...	...	7	9	2	9	18	16	9	2	...
44	Brain disease, etc.	174	1	...	4	1	1	...	...	...	1	...	4	3	1	1	...	...
45	Cancer	558	...	...	14	1	...	...	1	3	7	...	7	11	10	5	1	1
46	Tumor	139	1	...	...	...	...	...	...	1	...	...	...	2	6	1	...	2
47	Childbirth	244	1	...	7	3	1	...	...	1	5	1	3	1	5	3	2	...
48	Convulsions	548	1	1	3	3	2	1	1	1	19	1	9	...	9	...	2	3
49	Diabetes	69	...	...	2	...	...	...	...	1	...	...	...	1	3	1	...	1
50	Dropsy	389	1	...	6	3	4	2	...	5	14	...	12	7	12	5	2	3
51	Fever	129	...	...	1	...	...	...	...	...	...	1	5	1	...	2	...	...
52	Fever, Malarial	146	...	...	3	...	...	1	...	1	...	...	2	3	4	1	1	1
53	*Heart diseases*	*1,329*	*2*	...	*28*	*3*	*4*	*4*	...	*14*	*28*	*4*	*22*	*26*	*38*	*13*	*7*	*6*
54	Pericarditis	97	...	...	1	1	1	1	...	4	2	...	...	7	1	1	...	...
55	Heart disease, etc.	864	1	...	10	2	3	2	...	7	25	1	18	10	24	6	5	6
56	"Heart failure"	368	1	...	17	...	...	1	...	3	1	3	4	9	13	6	2	...
57	Influenza	907	...	...	26	2	5	...	1	6	15	2	28	24	29	13	4	2
58	*Kidney diseases*	*442*	...	...	*3*	*4*	*2*	*1*	...	*4*	*11*	*3*	*6*	*10*	*18*	*5*	*1*	...
59	Kidneys, Inflammat'n of	332	...	...	2	1	2	1	...	4	10	2	5	6	13	5	1	...
60	Kidney disease, etc.	110	...	...	1	3	...	...	...	...	1	1	1	4	5	...	...	...
61	Liver disease, etc.	121	...	...	...	2	1	2	1	...	2	...	2	2	1	...	...	...
62	*Lung diseases*	*1,765*	*4*	*1*	*36*	*12*	*11*	*1*	*8*	*11*	*43*	*1*	*30*	*28*	*23*	*11*	*4*	*10*
63	Asthma	65	1	...	2	1	...	...	1	2	1	...	...	...	2	...	...	...
64	Bronchitis	184	...	...	1	1	...	...	...	1	3	...	1	3	1	...	2	1
65	Pleurisy	30	...	...	1	...	...	...	...	...	3	...	...	...	...	1	...	...
66	Pneumonia	1,298	2	...	29	7	10	1	7	8	33	1	23	20	18	7	2	9
67	Lungs, Congestion of	87	...	...	1	...	1	...	...	...	1	...	1	5	1	2	...	...
68	Lung disease, etc.	101	1	1	2	3	...	...	...	...	2	...	2	...	1	1	...	...
69	Rheumatism	149	...	...	4	2	...	...	...	...	4	...	4	4	1	1	...	1
70	Septicæmia	167	...	...	5	...	...	1	...	3	4	2	1	1	9	1	...	...
71	Spine disease, etc.	94	...	...	2	...	1	...	...	1	...	...	...	...	1	...	1	...
72	*Stomach diseases*	*178*	*1*	...	*1*	...	...	...	...	*2*	*4*	...	*3*	*2*	*4*	*4*	*2*	...
73	Stomach, Inflammat'n of	53	1	...	...	...	...	...	...	2	...	...	...	...	...	3	2	...
74	Stomach disease, etc.	125	...	...	1	...	...	...	...	...	4	...	3	2	4	1	...	...
75	Syphilis	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
76	*Unclassified*	*1,949*	2	3	38	6	7	2	7	16	43	2	35	20	36	17	4	8

causes of death in Michigan during the year 1892, by counties.

to Keweenaw.

Chippewa.	Clare.	Clinton.	Crawford.	Delta.	Dickinson.	Eaton.	Emmet.	Genesee.	Gladwin.	Gogebic.	Grand Traverse.	Gratiot.	Hillsdale.	Houghton.	Huron.	Ingham.	Ionia.	Iosco.	Iron.	Isabella.	Jackson.	Kalamazoo.	Kalkaska.	Kent.	Keweenaw.	Line number.
4	6	14	2	1	....	24	1	44	..	4	17	18	20	17	8	47	20	8	2	12	53	56	7	97	3	37
....	....	1	1	....	....	3	..	7	..	..	2	1	1	1	1	13	4	1	1	3	4	7	..	22	1	38
....	1	1	....	....	....	....	..	4	..	..	....	....	1	1	1	....	1	....	..	....	1	....	2	8	..	39
2	....	2	....	1	....	1	..	2	..	3	2	2	1	8	2	6	2	3	1	4	2	3	2	18	..	40
....	....	....	....	....	....	1	..	2	..	1	....	....	1	1	1	....	1	....	..	1	....	4	..	3	..	41
....	2	1	....	....	....	....	1	1	..	..	....	4	2	....	....	3	1	1	..	1	15	2	1	6	2	42
....	2	8	1	....	....	18	..	24	..	..	2	11	10	3	1	22	10	2	..	3	26	32	2	27	..	43
2	1	1	....	....	....	1	..	4	..	..	11	....	4	3	2	3	1	1	..	....	5	8	..	13	..	44
1	1	6	....	3	....	9	1	14	..	..	1	12	12	8	4	8	6	1	..	3	19	25	..	42	..	45
1	1	3	....	....	....	2	..	1	..	1	....	1	3	7	2	2	1	....	..	....	6	7	..	10	..	46
....	1	3	....	2	5	2	1	2	..	3	2	1	2	7	5	5	4	5	1	1	3	5	..	11	1	47
3	....	1	1	2	6	4	..	5	..	11	4	1	1	19	7	2	....	7	2	....	4	3	..	19	1	48
....	....	3	1	....	1	2	..	1	..	..	....	2	4	....	....	....	3	....	..	....	1	1	..	2	..	49
....	....	5	....	2	1	8	4	6	1	4	2	3	9	3	2	9	3	1	..	3	6	7	1	16	..	50
8	....	....	....	....	2	2	..	2	..	2	....	....	3	17	1	3	6	3	..	....	1	1	2	7	..	51
....	....	2	....	....	....	5	1	1	..	1	....	1	1	....	5	1	2	....	..	....	3	7	1	4	..	52
6	2	28	....	6	4	37	4	52	2	4	21	12	51	6	11	30	21	9	..	2	47	39	6	71	2	53
....	....	2	....	....	....	2	..	4	..	..	1	....	4	....	1	3	....	....	..	....	4	2	1	9	..	54
....	1	19	....	5	3	21	4	30	1	1	6	10	29	4	9	11	11	5	..	2	31	19	5	46	1	55
6	1	7	....	1	1	14	..	18	1	3	14	2	18	2	1	16	10	4	..	....	12	18	..	16	1	56
....	1	17	1	....	....	16	1	12	3	1	6	10	21	6	8	28	14	5	1	10	25	27	1	59	1	57
....	....	7	....	1	1	10	2	9	..	..	4	6	10	4	4	12	13	1	1	4	11	8	3	21	1	58
....	....	5	....	....	1	9	1	9	..	..	3	5	7	2	4	10	8	1	1	4	8	5	2	12	1	59
....	....	2	....	1	....	1	1	....	..	..	1	1	3	2	....	2	5	....	..	....	3	3	1	9	..	60
....	....	1	....	....	....	3	..	5	..	..	1	....	2	2	....	2	1	....	..	....	3	3	..	3	..	61
3	1	29	1	14	15	26	2	31	1	13	8	14	26	40	17	30	25	9	6	9	51	50	2	137	9	62
....	....	2	....	....	....	2	..	2	..	1	....	....	....	....	2	....	1	....	..	....	....	3	..	1	..	63
1	....	2	....	4	2	1	..	1	..	1	1	1	....	15	1	....	1	....	2	....	1	3	..	12	6	64
....	....	3	....	....	1	....	..	....	..	..	....	1	....	1	....	....	....	2	..	....	....	....	..	6	..	65
1	1	18	....	10	12	23	2	24	..	9	4	7	22	20	14	23	21	3	4	6	47	43	1	107	3	66
....	....	2	1	....	....	....	..	2	1	..	2	3	2	2	....	5	2	3	..	2	2	1	..	5	..	67
1	....	2	....	....	....	....	..	2	..	2	1	2	2	2	....	2	....	1	..	1	1	....	1	6	..	68
1	....	5	....	3	1	2	..	9	..	..	....	5	6	3	....	4	1	2	..	....	3	6	1	7	1	69
1	....	3	....	4	....	2	..	2	..	..	2	3	2	1	3	6	4	1	..	1	3	3	..	5	..	70
2	1	3	1	....	....	1	2	1	..	1	1	....	1	1	1	1	1	2	1	3	2	5	1	5	..	71
1	....	2	....	....	....	1	1	4	..	2	1	3	5	2	1	4	2	1	..	....	5	8	1	12	1	72
....	....	2	....	....	....	....	..	....	..	..	1	2	2	1	....	1	2	1	..	....	1	1	..	5	1	73
1	....	....	....	....	....	1	1	4	..	2	....	1	3	1	1	3	....	....	..	....	4	7	1	7	..	74
....	....	....	....	....	....	....	..	....	..	..	....	....	....	....	....	....	....	....	..	....	....	....	..	1	..	75
9	6	16	6	9	8	32	4	35	2	14	13	16	37	54	32	43	39	25	10	6	58	32	8	123	..	76

Table 70.—CONTINUED.—*Important diseases returned as causes of*

Line number.	Causes of death, 1892.	Counties—Lake																
		Lake.	Lapeer.	Leelanau.	Lenawee.	Livingston.	Luce.	Mackinac.	Macomb.	Manistee.	Manitou.	Marquette.	Mason.	Mecosta.	Menominee.	Midland.	Missaukee.	Monroe.
1	TOTAL DEATHS	28	197	52	412	166	24	43	335	204	2	574	151	126	174	89	47	296
2	SPECIFIED DISEASES	22	161	44	370	143	13	37	301	116	1	431	111	89	91	70	30	238
3	*Dangerous Communicable Diseases*	*4*	*43*	*5*	*72*	*37*	*5*	*23*	*63*	*30*	..	*147*	*42*	*22*	*38*	*16*	*8*	*90*
4	Consumption	1	23	4	59	21	2	8	28	19	..	31	19	15	10	5	3	34
5	*Other tubercular diseases*	....	*1*	*1*	....	....	....	....	*2*	....	..	*1*	....	....	....	....	....	*2*
6	Marasmus	....	....	....	....	....	....	....	....	....	..	....	....	....	....	....	....	....
7	Meningitis, Tuberc.	....	....	....	....	....	....	....	1	....	..	....	....	....	....	....	....	2
8	Scrofula	....	1	....	....	....	....	....	....	....	..	1	....	....	....	....	....	....
9	Tabes mesenterica	....	....	1	....	....	....	....	1	....	..	....	....	....	....	....	....	....
10	Other forms of tuberculosis	....	....	....	....	....	....	....	....	....	..	....	....	....	....	....	....	....
11	Croup	....	2	....	1	....	1	1	4	....	..	14	....	1	3	....	....	2
12	Croup, Membranous	....	....	....	....	....	....	....	....	1	..	2	....	....	1	1	....	3
13	Diphtheria	3	4	....	5	12	....	1	14	1	..	13	6	....	5	6	....	38
14	Erysipelas	....	....	....	....	....	....	....	1	....	..	1	2	2	....	1	1	....
15	Fever, Puerperal	....	1	....	....	....	....	....	....	....	..	1	5	....	....	....	1	....
16	Fever, Scarlet	....	4	....	....	2	2	13	9	4	..	20	1	1	2	....	....	....
17	Fever, Typhoid	....	3	....	6	1	....	....	3	5	..	38	4	....	7	3	1	8
18	Fever, Typho-malarial	....	....	....	....	....	....	....	....	....	..	....	1	....	....	....	....	....
19	Fever, Typhus	....	....	....	....	....	....	....	....	....	..	....	....	....	....	....	....	....
20	Glanders	....	....	....	....	....	....	....	....	....	..	....	....	....	....	....	....	....
21	Measles	....	1	....	1	....	....	....	....	....	..	19	....	....	8	....	....	1
22	—German (Rötheln)	....	....	....	....	....	....	....	....	....	..	....	....	....	....	....	....	....
23	Small-pox	....	....	....	....	1	....	....	....	....	..	....	....	....	....	....	....	....
24	Chicken-pox	....	....	....	....	....	....	....	....	....	..	....	....	....	....	....	....	....
25	Whooping-cough	....	4	....	....	....	....	....	2	....	..	7	4	3	2	....	2	2
26	*Bladder diseases*	....	*2*	....	*1*	*1*	....	....	*1*	....	..	....	....	*1*	....	....	....	*1*
27	Calculus	....	....	....	....	1	....	....	....	....	..	....	....	1	....	....	....	1
28	Cystitis	....	1	....	....	....	....	....	1	....	..	....	....	....	....	....	....	....
29	Bladder disease, etc.	....	1	....	1	....	....	....	....	....	..	....	....	....	....	....	....	....
30	*Bowel diseases*	*1*	*11*	*3*	*21*	*5*	*1*	*5*	*31*	*9*	..	*61*	*10*	*6*	*10*	*6*	*1*	*21*
31	Bowels, Inflammation of	....	5	....	2	3	....	1	10	5	..	24	2	5	3	3	....	7
32	Diarrhea	....	1	1	2	....	....	2	8	1	..	13	2	....	2	....	....	5
33	Cholera infantum	....	....	1	7	1	1	2	6	2	..	16	5	....	1	3	....	7
34	Dysentery	....	....	....	2	....	....	....	....	....	..	....	....	....	....	....	....	2
35	Peritonitis	....	2	....	2	....	....	....	2	1	..	3	....	....	....	....	....	....
36	Bowel disease, etc.	1	3	1	6	1	....	....	5	....	..	5	1	1	4	....	1	....

death in Michigan during the year 1892, by counties.

to Wexford.

Montcalm.	M'tmoreney.	Muskegon.	Newaygo.	Oakland.	Oceana.	Ogemaw.	Ontonagon.	Osceola.	Oscoda.	Otsego.	Ottawa.	Presque Isle.	Roscommon.	Saginaw.	Sanilac.	Schoolcraft.	Shiawassee.	St. Clair.	St. Joseph.	Tuscola.	Van Buren.	Washtenaw.	Wayne.	Wexford.	Line number.
241	6	449	116	445	87	32	20	101	12	33	351	32	13	1,087	287	46	184	575	315	219	286	436	3,722	91	1
188	4	378	93	392	63	30	16	76	8	30	293	6	12	843	231	36	147	481	265	166	231	389	3,189	71	2
37	*1*	*141*	*28*	*68*	*12*	*4*	*7*	*18*	*4*	*12*	*76*	..	*5*	*234*	*80*	*9*	*49*	*150*	*49*	*59*	*51*	*86*	*1,163*	*18*	3
21	..	64	8	42	6	2	3	8	2	....	32	..	5	89	38	6	26	61	39	36	32	54	296	5	4
4	..	*2*	*1*	....	....	*1*	..	*1*	..	....	3	..	..	*8*	*1*	..	*1*	*3*	*3*	*1*	*2*	*2*	*101*	....	5
....	..	.....	....	....	....	1	..	....	..	....	....	..	..	1	....	..	....	....	....	....	....	....	92	....	6
1	..	.....	....	....	....	..	..	....	..	....	1	..	..	5	1	..	....	1	2	....	....	....	2	....	7
....	..	.....	....	....	....	..	..	....	..	....	2	..	..	.....	....	..	....	.....	....	....	....	1	1	....	8
3	..	2	1	....	....	..	..	1	..	....	....	..	..	.....	....	..	1	1	....	1	....	1	1	....	9
....	..	.....	....	....	....	..	..	....	..	....	....	..	..	2	....	..	....	1	1	....	2	....	5	....	10
1	..	2	1	1	1	..	3	....	..	1	3	..	..	13	5	1	1	4	1	2	1	1	70	1	11
....	..	3	3	3	....	1	..	....	..	....	....	..	..	11	1	..	....	2	....	2	....	....	.....	....	12
2	1	52	6	8	....	..	1	....	..	10	14	..	..	58	13	1	13	27	....	4	1	17	322	1	13
1	..	1	1	3	....	..	..	1	..	1	1	..	..	1	1	..	3	4	1	2	1	3	6	....	14
....	..	1	1	....	....	..	..	....	..	....	2	..	..	5	....	1	....	.....	....	....	....	....	3	....	15
1	..	5	2	2	1	..	..	2	1	....	7	..	..	21	1	..	1	5	2	2	3	5	186	....	16
7	..	7	5	8	4	..	..	3	1	....	10	..	..	26	5	..	3	32	2	10	5	3	142	5	17
....	..	.....	....	....	....	..	..	....	..	....	1	..	..	.....	....	..	....	3	....	....	....	....	9	....	18
....	..	.....	....	....	....	..	..	....	..	....	1	..	..	.....	....	..	....	1	....	....	....	....	.....	....	19
....	..	.....	....	....	....	..	..	....	..	....	....	..	..	.....	....	..	....	.....	....	....	....	....	.....	....	20
....	..	.....	....	1	....	..	..	....	..	....	....	..	..	1	4	..	....	.....	1	....	....	....	6	....	21
....	..	.....	....	....	....	..	..	....	..	....	....	..	..	.....	....	..	....	.....	....	....	....	....	.....	....	22
....	..	.....	....	....	....	..	..	....	..	....	....	..	..	.....	....	..	....	.....	....	....	....	....	.....	....	23
....	..	.....	....	....	....	..	..	....	..	....	....	..	..	.....	....	..	....	.....	....	....	....	....	2	....	24
....	..	4	....	....	....	..	..	3	..	....	2	..	..	1	11	..	1	8	....	....	6	1	20	6	25
3	..	.....	....	*2*	....	..	..	....	..	....	....	..	..	*2*	*1*	..	..	.....	....	....	....	*3*	*8*	....	26
....	..	.....	....	1	....	..	..	....	..	....	....	..	..	1	1	..	....	.....	....	....	....	....	2	....	27
1	..	.....	....	....	....	..	..	....	..	....	....	..	..	1	....	..	....	.....	....	....	....	3	1	....	28
2	..	.....	....	1	....	..	..	....	..	....	....	..	..	.....	....	..	....	.....	....	....	....	....	5	....	29
16	..	*36*	*5*	*28*	*9*	*3*	..	*7*	*1*	*3*	*20*	..	*1*	*78*	*11*	*7*	*11*	*39*	*14*	*14*	*19*	*24*	*329*	*8*	30
8	..	10	1	7	2	2	..	3	1	....	2	..	1	12	7	..	4	12	2	3	2	4	42	1	31
2	..	5	....	5	1	..	..	2	..	....	10	..	..	7	2	..	2	1	1	....	2	3	84	1	32
5	..	15	3	5	4	..	..	1	..	2	6	..	..	49	1	..	2	17	3	7	9	5	137	5	33
1	..	1	....	2	2	..	..	....	..	....	....	..	..	1	....	6	....	.....	1	1	....	2	9	1	34
....	..	4	....	3	....	1	..	....	..	....	....	..	..	4	....	1	....	1	1	....	1	5	18	....	35
....	..	1	1	6	....	..	..	1	..	1	2	..	..	5	1	..	3	8	6	3	5	5	39	....	36

Table 70.—Concluded.—*Important diseases returned as*

Line number.	Causes of death, 1892.	Counties—Lake																
		Lake.	Lapeer.	Leelanau.	Lenawee.	Livingston.	Luce.	Mackinac.	Macomb.	Manistee.	Manitou.	Marquette.	Mason.	Mecosta.	Menominee.	Midland.	Missaukee.	Monroe.
37	*Brain diseases*	2	12	3	45	14	2	....	27	11	....	35	7	14	8	7	2	22
38	Apoplexy	....	2	....	8	1	....	....	4	1	....	5	1	....	....	1	....	3
39	Brain, Congestion of	1	1	1	1	2	1	....	....	1	....	....	....	....	....	1	1	1
40	Brain, Inflammation of	....	3	1	2	....	1	....	5	4	....	20	1	3	2	1	....	7
41	Epilepsy	....	1	....	2	....	....	....	3	1	....	....	....	1	....	....	....	3
42	Meningitis	....	....	....	2	1	....	....	1	2	....	5	1	1	2	1	....	2
43	Paralysis	1	4	1	24	7	....	....	11	1	....	4	3	6	3	1	1	5
44	Brain disease, etc.	....	1	....	6	3	....	....	3	1	....	1	1	3	1	2	....	1
45	Cancer	2	6	1	27	7	....	....	17	7	....	10	4	3	1	1	....	8
46	Tumor	....	1	....	3	2	....	....	....	....	....	....	....	....	2	....	....	....
47	Childbirth	....	3	1	1	4	....	1	2	4	....	8	2	2	2	2	1	2
48	Convulsions	....	1	1	4	....	....	....	6	6	....	21	5	2	5	4	2	2
49	Diabetes	....	1	....	1	....	....	....	1	....	....	1	....	1	....	1	....	1
50	Dropsy	2	3	3	13	....	....	....	9	4	....	2	3	2	3	2	1	6
51	Fever	....	....	....	2	....	....	....	1	1	....	11	2	....	1	2	3	1
52	Fever, Malarial	1	1	....	2	....	....	....	2	1	....	2	6	....	....	4	....	....
53	*Heart diseases*	....	18	3	43	24	....	....	22	8	1	24	2	3	2	5	....	12
54	Pericarditis	....	6	....	2	2	....	....	3	....	....	....	....	1	....	1	....	....
55	Heart disease, etc.	....	10	2	22	22	....	....	14	5	1	18	2	2	1	4	....	6
56	"Heart failure"	....	2	1	19	....	....	....	5	3	....	6	....	....	1	....	....	6
57	Influenza	1	12	6	17	10	1	1	25	5	....	6	6	5	1	4	2	10
58	*Kidney diseases*	1	4	1	15	5	....	....	12	2	....	5	1	3	....	2	....	4
59	Kidneys, Inflammat'n of	....	1	1	13	5	....	....	8	2	....	5	1	3	....	....	....	2
60	Kidney disease, etc.	1	3	....	2	....	....	....	4	....	....	....	....	....	....	2	....	2
61	Liver disease, etc.	1	1	....	4	1	....	....	3	....	....	....	1	....	....	1	1	3
62	*Lung diseases*	4	14	9	43	16	3	1	23	11	....	71	7	7	9	5	4	16
63	Asthma	1	2	....	2	....	....	....	1	....	....	2	....	....	....	....	....	1
64	Bronchitis	2	2	2	1	2	1	....	....	2	....	18	....	....	1	1	....	....
65	Pleurisy	....	....	....	....	....	....	....	....	1	....	2	....	....	....	....	....	....
66	Pneumonia	1	10	5	33	14	2	1	19	4	....	49	6	6	7	4	4	7
67	Lungs, Congestion of	....	....	....	4	....	....	....	1	2	....	....	1	1	....	....	....	....
68	Lung disease, etc.	....	....	2	3	....	....	....	2	2	....	....	....	....	1	....	....	2
69	Rheumatism	....	2	....	1	....	....	1	1	1	....	2	1	2	....	1	....	1
70	Septicæmia	....	....	1	6	....	....	1	2	4	....	3	1	2	1	....	1	1
71	Spine disease, etc.	....	1	....	3	....	....	....	3	....	....	....	2	1	1	....	1	4
72	*Stomach diseases*	....	....	1	3	1	....	....	4	4	....	1	1	1	1	....	1	3
73	Stomach, Inflammat'n of	....	....	....	2	....	....	....	2	4	....	....	....	....	....	....	....	....
74	Stomach disease, etc.	....	....	1	1	1	....	....	2	....	....	1	1	1	1	....	1	3
75	*Syphilis*	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	2
76	*Unclassified*	3	25	6	42	16	1	4	46	8	....	21	8	12	6	7	2	34

causes of death in Michigan during the year 1892, by counties.

to Wexford.

Montcalm.	M'tmorency.	Muskegon.	Newaygo.	Oakland.	Oceana.	Ogemaw.	Ontonagon.	Osceola.	Oscoda.	Otsego.	Ottawa.	Presque Isle.	Roscommon.	Saginaw.	Sanilac.	Schoolcraft.	Shiawassee.	St. Clair.	St. Joseph.	Tuscola.	Van Buren.	Washtenaw.	Wayne.	Wexford.	Line number.
23	----	31	7	59	3	3	----	6	--	1	24	--	2	70	18	4	8	43	30	10	19	39	225	10	37
6	----	1	----	10	1	----	----	----	--	--	1	--	1	8	3	1	1	6	6	2	4	7	26	1	38
1	----	----	----	----	----	----	----	----	--	--	----	--	--	3	2	----	2	2	1	----	2	1	11	----	39
3	----	15	3	2	----	2	----	2	--	--	14	--	--	13	5	1	----	13	3	1	2	4	66	4	40
1	----	2	1	5	1	----	----	----	--	--	1	--	--	1	1	----	----	4	----	----	1	1	8	----	41
4	----	2	----	1	----	----	----	----	--	--	----	--	1	13	1	1	2	6	3	----	----	2	30	----	42
8	----	9	2	16	----	1	----	3	--	1	8	--	--	24	4	----	1	9	16	5	8	19	67	4	43
----	----	2	1	25	1	----	----	1	--	--	----	--	--	8	2	1	2	3	1	2	2	5	17	1	44
2	1	11	2	15	1	1	----	1	--	--	13	--	--	36	7	----	5	13	22	5	11	12	69	----	45
3	----	2	----	3	1	----	----	----	1	--	3	--	--	3	2	1	1	7	3	3	2	2	33	----	46
3	----	6	2	4	3	----	1	1	--	1	7	2	--	10	2	----	1	7	6	4	3	5	36	----	47
2	----	7	1	4	----	2	----	----	--	1	5	1	--	37	6	----	2	9	3	2	3	8	235	2	48
3	----	----	----	2	----	----	----	----	--	--	4	--	--	2	2	----	1	2	2	1	2	7	4	----	49
7	----	8	5	7	1	----	----	4	--	2	8	1	1	11	4	----	2	6	3	2	8	6	77	1	50
1	----	3	----	----	----	----	----	----	--	--	4	--	--	2	1	----	1	7	5	3	----	----	8	----	51
1	----	----	----	----	----	----	----	----	--	--	2	--	1	9	4	1	----	16	4	1	1	----	34	1	52
19	2	22	6	35	7	2	4	5	--	1	21	--	--	60	9	2	13	27	19	11	23	56	142	4	53
7	----	2	2	1	1	----	----	----	--	--	----	--	--	1	2	----	2	4	1	1	----	6	----	----	54
12	1	19	4	21	5	2	4	4	--	1	15	--	--	42	5	1	6	16	17	6	11	36	129	4	55
----	1	1	----	13	1	----	----	1	--	--	6	--	--	17	2	1	5	7	1	4	12	14	13	----	56
11	---	13	8	28	5	4	----	7	1	2	34	--	--	44	14	----	12	33	35	6	19	27	55	6	57
10	----	10	4	18	7	----	----	4	--	1	2	-	--	17	10	----	8	12	7	5	7	13	52	4	58
7	----	8	3	13	1	----	----	2	--	1	1	--	--	14	8	----	7	9	7	5	7	12	34	2	59
3	----	2	1	5	1	----	----	2	--	--	1	--	--	3	2	----	1	3	----	----	----	1	18	2	60
----	----	----	1	3	1	----	----	2	--	--	3	--	--	8	1	1	2	3	1	1	3	5	31	----	61
21	----	39	9	41	5	5	2	9	1	4	32	--	1	94	15	5	13	38	19	8	18	32	302	12	62
----	----	----	----	2	----	----	----	----	--	--	4	--	--	3	----	----	----	1	----	1	2	----	19	----	63
1	----	4	----	3	----	1	----	----	1	--	3	--	--	11	3	1	1	1	----	----	1	1	51	----	64
----	----	----	----	----	1	----	----	1	--	--	----	--	--	----	----	----	----	----	1	----	1	----	3	1	65
17	----	33	7	31	4	3	2	8	--	2	24	--	1	69	9	3	11	29	13	4	12	26	208	8	66
----	----	1	1	2	----	----	----	----	--	2	----	--	--	4	3	1	----	3	1	----	1	3	5	1	67
3	----	1	1	3	----	1	----	----	--	--	1	--	--	7	----	----	1	4	4	3	1	2	16	2	68
1	----	4	----	6	----	1	----	----	--	--	----	--	--	6	4	----	1	6	1	2	2	3	18	----	69
3	----	4	4	3	----	----	----	3	--	--	3	--	--	7	4	1	2	3	2	----	4	5	22	1	70
2	----	1	1	1	----	1	----	----	--	--	3	--	--	7	1	----	----	1	1	4	----	1	10	1	71
1	----	6	----	3	1	----	----	3	-	6	4	--	--	8	2	----	5	5	6	1	4	4	22	1	72
1	----	1	----	----	----	----	----	----	--	--	----	--	--	----	----	----	1	----	2	----	1	----	11	----	73
----	----	5	----	3	1	----	----	3	--	1	4	-	-	8	2	----	4	5	4	1	3	4	11	1	74
----	----	----	1	1	----	----	----	----	--	--	----	--	--	----	----	----	----	----	----	----	----	----	5	----	75
19	----	34	9	61	13	4	2	6	--	1	25	2	1	98	33	5	10	54	33	24	32	51	359	2	76

Table 71.—*Important diseases and groups of diseases returned as*

Line No.	Causes of death, 1869-92.	Years.								
		1892.	1891.	1890.	1889.	1888.	1887.	1886.	1885.	1884.
1	TOTAL DEATHS	21,729	22,079	21,642	20,315	21,764	19,482	18,187	16,646	18,056
2	SPECIFIED DISEASES.	17,578	18,115	17,612	16,767	18,114	16,257	15,305	13,766	15,133
3	*Dangerous Communicable Diseases*	*5,029*	*5,180*	*5,254*	*4,762*	*5,498*	*5,249*	*4,976*	*4,431*	*5,053*
4	Consumption	2,060	2,060	2,207	2,137	2,424	2,127	2,051	1,964	2,198
5	*Other tubercular diseases*	*208*	*176*	*199*	*116*	*141*	*142*	*150*	*147*	*183*
6	Marasmus	109	90	74	16	30	21	57	60	44
7	Meningitis, Tuberc.	33	27	41	43	47	62	40	34	49
8	Scrofula	17	16	34	26	22	37	25	25	42
9	Tabes mesenterica	37	23	32	21	31	24	21	19	34
10	Other forms of tuberculosis	12	20	13	10	11	8	7	9	14
11	Croup	211	253	415	357	334	282	296	291	285
12	Croup, Membranous	80	35	56	46	90	117	104	46	40
13	Diphtheria	1,020	1,060	1,266	849	723	935	1,117	1,054	1,065
14	Erysipelas	64	66	46	52	82	70	63	68	71
15	Fever, Puerperal	42	35	26	32	51	33	30	33	29
16	Fever, Scarlet	442	400	222	240	323	318	319	245	326
17	Fever, Typhoid	626	684	465	627	638	770	498	387	514
18	Fever, Typho-malarial	28	16	27	43	31	52	25	7	29
19	Fever, Typhus	6	7	11	4	3	7	2	1	5
20	Glanders	1								
21	Measles	72	225	229	104	414	285	129	38	144
22	—German (Röthein)	2								
23	Small-pox	1	1	6	3	3		6	3	3
24	Chicken-pox	4	4	4	2	2	1	1	4	1
25	Whooping-cough	147	158	75	140	174	110	185	138	160
26	*Bladder diseases*	*50*	*52*	*53*	*40*	*29*	*49*	*40*	*41*	*36*
27	Calculus	11	12	10	7	14	17	12	21	16
28	Cystitis	22	17	12	20	5	24	23	15	12
29	Bladder disease, etc.	17	3	11	13	10	8	5	5	8
30	*Bowel diseases*	*1,631*	*1,900*	*1,844*	*1,961*	*1,947*	*1,813*	*1,726*	*1,210*	*1,931*
31	Bowels, Inflammation of	334	353	315	352	390	339	327	324	350
32	Diarrhea	277	292	325	450	371	414	378	261	409
33	Cholera infantum	606	799	592	722	767	626	653	360	781
34	Dysentery	74	89	128	158	153	183	158	105	160
35	Peritonitis	89	116	98	50	46	35	32	22	27
36	Bowel disease, etc.	251	251	386	229	220	221	178	138	194

NOTE.—The arrangement of causes of death is uniform in Tables 69, 70 and 71. For explanation of the terms used, their inclusion and relation to the classifications formerly employed in these reports, see text beginning on page 184, to which reference may be made by line numbers.

causes of death in Michigan for each of the years 1869-92, inclusive.

1869-92.															
1883.	1882.	1881.	1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	Line No.
16,906	16,425	19,238	16,102	14,407	12,766	12,919	12,576	11,990	12,500	14,258	13,371	9,728	10,766	9,145	1
13,664	13,366	15,922	13,024	11,516	10,057	10,076	9,801	9,257	9,870	11,798	11,243	7,911	8,824	7,292	2
5,082	*5,279*	*6,533*	*5,263*	*4,857*	*3,918*	*3,833*	*3,569*	*3,271*	*3,322*	*4,028*	*4,065*	*3,082*	*3,561*	*2,645*	3
1,992	1,804	1,954	1,829	1,680	1,641	1,664	1,590	1,479	1,392	1,447	1,467	1,303	1,451	1,233	4
126	*162*	*174*	*144*	*112*	*125*	*139*	*134*	*128*	*129*	*156*	*149*	*119*	*143*	*80*	5
9	52	37	26	9	6	11	8	3	8	10	3	------	1	------	6
48	48	64	42	43	55	60	68	60	59	81	84	65	65	11	7
25	29	31	32	36	33	32	26	34	23	43	40	38	60	55	8
32	26	36	28	16	16	23	22	19	28	15	15	12	9	8	9
12	7	6	16	8	15	12	10	12	11	7	7	4	8	6	10
284	303	316	257	233	199	145	157	156	132	166	153	146	124	105	11
52	46	64	65	45	37	19	21	11	10	6	10	9	3	------	12
1,007	1,416	2,063	1,542	1,480	889	595	327	213	216	219	196	121	121	89	13
85	82	86	88	92	75	69	86	108	104	158	151	87	68	69	14
45	31	57	39	41	16	25	32	42	54	51	44	26	38	21	15
673	592	384	371	418	429	404	399	423	440	580	565	696	852	252	16
439	463	884	513	397	329	446	426	433	611	677	621	357	574	437	17
11	32	49	9	7	18	4	6	------	------	7	1	------	------	------	18
11	10	19	11	14	5	29	11	14	15	17	31	8	1	9	19
------	------	------	------	1	1	------	------	------	------	------	1	------	------	------	20
258	150	256	125	167	16	62	118	134	46	245	180	67	56	147	21
------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	22
5	101	82	3	6	6	102	76	26	18	92	302	74	10	42	23
2	1	3	2	2	1	------	5	3	1	1	2	1	1	3	24
92	86	142	264	162	132	131	181	101	153	206	192	68	119	158	25
39	*16*	*28*	*45*	*35*	*37*	*30*	*44*	*40*	*34*	*37*	*33*	*32*	*34*	*30*	26
16	6	14	23	23	23	16	34	21	20	25	23	24	25	24	27
17	6	10	16	6	10	11	6	14	7	9	6	4	7	6	28
6	4	4	6	6	4	3	4	5	7	3	4	4	2	------	29
1,315	*1,257*	*2,201*	*1,443*	*1,039*	*924*	*1,255*	*1,208*	*1,102*	*1,288*	*1,566*	*1,781*	*885*	*1,371*	*968*	30
294	276	342	267	237	214	226	239	218	208	286	234	184	187	119	31
267	259	501	310	226	173	290	304	283	380	383	437	216	407	311	32
465	428	857	499	300	243	370	331	289	278	306	394	129	181	103	33
114	96	270	160	135	158	221	195	162	304	319	456	173	374	236	34
16	21	19	10	16	11	8	8	14	8	9	13	7	5	5	35
159	177	212	197	125	125	140	131	136	110	263	247	176	217	204	36

Table 71.—CONCLUDED.—*Important diseases returned as*

Line No.	Causes of death, 1869-92.	Years,								
		1892.	1891.	1890.	1889.	1888.	1887.	1886.	1885.	1884.
37	*Brain diseases*	*1,534*	*1,614*	*1,544*	*1,511*	*1,615*	*1,441*	*1,435*	*1,304*	*1,349*
38	Apoplexy	219	218	153	159	147	141	161	121	132
39	Brain, Congestion of	68	87	.....	.....	.....	.....	.....	.....	.....
40	Brain, Inflammation of	292	315	318	341	405	319	332	296	310
41	Epilepsy	62	42	54	40	65	54	49	50	43
42	Meningitis	148	204	180	164	194	184	182	174	224
43	Paralysis	571	596	558	542	553	465	485	400	397
44	Brain disease, etc.	174	157	281	265	251	278	226	263	233
45	Cancer	558	534	533	492	480	453	391	403	361
46	Tumor	189	157	123	102	108	93	91	104	85
47	Childbirth	244	255	196	254	250	236	223	230	244
48	Convulsions	548	547	349	453	513	474	431	452	436
49	Diabetes	69	78	63	74	71	61	68	65	49
50	Dropsy	389	397	422	337	464	342	334	330	324
51	Fever	129	107	123	111	164	117	123	96	133
52	Fever, Malarial	146	138	146	197	200	171	168	142	186
53	*Heart diseases*	*1,329*	*1,346*	*1,196*	*1,152*	*1,055*	*954*	*794*	*799*	*791*
54	Pericarditis	97	70	70	61	86	107	64	69	70
55	Heart disease, etc.	864	901	1,115	1,071	969	847	730	730	721
56	"Heart failure"	368	375	.....	.....	.....	.....	.....	.....	.....
57	Influenza	907	1,076	1,084	176	2	2	3	2	.....
58	*Kidney diseases*	*442*	*407*	*331*	*347*	*351*	*327*	*328*	*304*	*264*
59	Kidneys, Inflammat'n of	332	271	227	242	241	226	244	215	191
60	Kidney disease, etc.	110	136	104	105	110	101	78	89	73
61	Liver disease, etc.	121	167	140	158	172	154	120	147	154
62	*Lung diseases*	*1,765*	*1,702*	*1,786*	*1,578*	*1,889*	*1,449*	*1,302*	*1,194*	*1,210*
63	Asthma	65	77	74	59	65	59	66	62	61
64	Bronchitis	184	138	188	120	199	121	97	113	98
65	Pleurisy	30	24	27	25	46	25	20	16	18
66	Pneumonia	1,298	1,248	1,224	1,182	1,313	970	857	804	840
67	Lungs, Congestion of	87	99	.....	.....	.....	.....	.....	.....	.....
68	Lung disease, etc.	101	116	273	242	266	274	262	199	193
69	Rheumatism	149	141	120	154	154	158	145	111	133
70	Septicæmia	167	172	158	191	157	121	125	129	94
71	Spine disease, etc.	94	106	110	124	114	95	131	88	114
72	*Stomach diseases*	*178*	*182*	*177*	*153*	*172*	*165*	*118*	*122*	*120*
73	Stomach, Inflammat'n of	58	49	27	39	43	35	37	44	39
74	Stomach disease, etc.	125	133	150	114	129	130	81	78	81
75	Syphilis	11	6	7	5	14	4	9	16	14
76	Unclassified	1,949	1,876	1,889	2,455	2,710	2,324	2,230	2,046	2,058

causes of death in Michigan, 1869–92.

1869–92.

1888.	1882.	1881.	1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	Line No.
1,188	*1,215*	*1,353*	*1,118*	*944*	*889*	*1,001*	*1,011*	*850*	*893*	*1,655*	*1,161*	*679*	*687*	*663*	37
87	89	111	123	105	95	86	107	94	63	81	70	70	54	65	38
															39
293	276	361	301	222	225	291	275	232	261	333	330	216	233	226	40
45	48	63	41	42	31	35	31	31	30	33	28	25	18	12	41
229	227	332	159	104	110	138	123	166	185	312	360	24	11	13	42
345	357	260	279	262	242	244	233	172	171	171	154	144	122	120	43
189	218	226	215	209	186	207	242	155	183	225	219	200	249	227	44
383	301	310	285	272	269	266	241	203	188	172	133	105	120	113	45
58	68	86	76	65	56	45	41	55	34	48	31	32	23	20	46
238	213	202	201	210	173	166	158	194	209	269	236	158	146	127	47
344	356	337	348	275	288	298	275	258	258	306	315	238	281	256	48
58	52	49	44	42	33	39	19	36	27	31	35	33	29	25	49
296	317	283	272	271	256	236	236	237	245	271	234	228	270	251	50
117	131	193	191	136	124	106	174	132	187	203	219	187	201	289	51
153	193	241	147	125	125	141	108	116	144	201	208	153	163	121	52
762	*627*	*620*	*551*	*538*	*444*	*448*	*394*	*380*	*411*	*396*	*366*	*291*	*311*	*274*	53
73	64	101	68	84	76	53	54	68	71	69	56	49	43	22	54
689	563	519	483	454	368	395	340	312	340	327	310	242	268	252	55
															56
2	1	2	3	5	3	2	-----	6	2	12	6	2	-----	-----	57
264	*206*	*197*	*154*	*113*	*113*	*93*	*80*	*54*	*63*	*68*	*60*	*59*	*45*	*32*	58
196	145	112	95	54	45	45	32	23	31	32	27	24	12	3	59
68	61	75	59	59	68	48	48	31	32	36	33	35	33	29	60
140	145	143	125	124	141	126	121	112	121	132	135	103	110	71	61
1,204	*1,216*	*1,262*	*1,279*	*1,107*	*859*	*799*	*994*	*1,137*	*1,223*	*1,043*	*962*	*700*	*625*	*621*	62
51	50	37	39	39	31	25	23	20	20	21	25	17	22	24	63
83	100	64	50	49	44	42	42	43	32	20	25	19	20	11	64
20	16	19	26	20	16	14	19	14	15	18	20	12	11	9	65
827	884	941	920	794	552	559	695	846	987	793	701	482	405	455	66
															67
223	216	201	244	205	216	159	215	214	219	191	191	170	167	122	68
113	107	123	85	85	61	76	70	74	73	72	101	51	44	49	69
113	80	52	18	6	8	5	5	4	2	2	1	-----	1	-----	70
108	94	139	76	83	78	85	75	72	120	174	101	33	39	39	71
125	*106*	*127*	*89*	*99*	*85*	*77*	*76*	*73*	*73*	*83*	*72*	*49*	*67*	*34*	72
42	33	44	31	32	30	20	22	27	24	36	29	24	23	15	73
83	73	83	58	67	55	57	54	46	49	47	43	25	44	19	74
9	6	3	13	10	2	7	6	7	9	6	3	2	10	2	75
1,553	1,380	1,448	1,199	1,075	1,035	942	996	844	944	1,023	985	809	686	647	76

DEATH-RATES IN MICHIGAN, 1892, BY COUNTIES.

The death-rate for the State in 1892, based upon an estimated population of 2,185,279, as given in Table 5, p. 13, is 9.9 per 1,000 inhabitants. Since that portion of the report was in type, however, the State census of 1894 has been taken, and the preliminary count of the population on June 1, 1894, is 2,241,439. The mean between these figures and the population of the State in 1890, 2,093,889, is 2,167,664, which may be accepted as a fairly correct estimate of the number of inhabitants in the year 1892. The corresponding death-rate is 10.0 per 1,000, an increase over the former rate of only .1 per 1,000. Michigan has suffered very severely from "hard times" in the last two years, 1893 and 1894, and the distress in the Upper Peninsula following the closure of the mines during the winter of 1893-94 has undoubtedly checked immigration into that part of the State, besides causing many miners who were unincumbered and able to leave, to go elsewhere in search of work. A large proportion of the growth of the State in recent years has been due to the rapid rate of increase in the Upper Peninsula, many of the counties in the southern part of the State showing an actual loss of population between censuses. In view of these facts it appears reasonable to conclude that had the conditions of growth remained as favorable for the past two years as heretofore, the State would not have shown a falling-off in annual growth between 1890 and 1894 as compared with that between 1880 and 1890, and that, therefore, the estimated population for 1892 based upon the annual increase for the previous decade is more nearly correct than the mean of the censuses of 1890 and 1894.

For the purpose of comparing the death-rates of individual counties, however, the rates based upon the censuses of 1890 and 1894 may give better results in some instances than those presented in Table 12 (p. 23). Following is a statement, by geographical divisions, of the death-rates in each county of the State, for the year 1892. The first rate under each county is computed on the mean of the populations of 1890 and 1894; the second rate is that stated in Table 12. Where the difference exceeds .5 per 1,000 the name of the county is printed in *italics:*

I.—Upper Peninsular Division. Alger, 7.6, 7.4; *Baraga*, 11.3, 12.5; Chippewa, 7.2, 7.3; Delta, 8.2, 8.3; *Dickinson, Iron, Marquette and Menominee (taken together since Dickinson was formed from the three other counties in 1891)*, 12.6, 11.6; *Gogebic*, 33.5, 28.9; *Houghton*, 13.9, 14.5; *Keweenaw*, 18.3, 19.9; *Luce*, 10.0, 8.1; *Mackinac*, 5.7, 4.9; *Ontonagon*, 3.8, 5.0; Schoolcraft, 7.1, 6.8.

II.—Northwestern Division. *Benzie*, 8.0, 9.5; *Grand Traverse*, 8.8, 9.5; Leelanau, 6.0, 6.3; Manistee, 8.1, 7.7; Manitou, 2.2, 2.6; Wexford, 7.2, 7.5.

III.—Northern Division. Antrim, 7.6, 7.6; Charlevoix, 7.3, 7.1; Cheboygan, 8.5, 8.4; *Crawford*, 8.1, 6.9; Emmet, 6.7, 7.0; Kalkaska, 8.9, 8.6; Otsego, 7.3, 7.0.

IV.—Northeastern Division. *Alcona*, 7.4, 6.8; Alpena, 9.2, 9.1; *Iosco*, 12.2, 9.9; Montmorency, 3.1, 3.4; *Ogemaw*, 5.7, 5.1; *Oscoda*, 6.5, 5.5; Presque Isle, 6.0, 6.4.

V.—Western Division. Kent, 11.4, 11.3; *Lake*, 4.5, 3.9; Mason, 8.7, 8.6; *Muskegon*, 11.6, 10.5; *Newaygo*, 5.9, 5.4; Oceana, 5.4, 5.3; Ottawa, 9.4, 9.8.

VI.—North-central Division. Clare, 5.8, 5.5; Gladwin, 2.9, 2.7; Isabella, 5.8, 5.8; Mecosta, 6.2, 6.0; Midland, 7.5, 7.8; Missaukee, 7.8, 8.2; Osceola, 6.5, 6.6; Roscommon, 7.0, 6.1.

VII.—Eastern Division. Arenac, 8.1, 8.2; Bay, 10.1, 9.8; Huron, 7.4, 7.4; Lapeer, 6.8, 6.8; Sanilac, 8.6, 8.5; *Saginaw*, 13.2, 12.5; St. Clair, 10.8, 10.8; Tuscola, 6.5, 6.5.

VIII.—Central Division. Barry, 6.9, 7.0; Clinton, 9.1, 9.2; Eaton, 8.9, 8.9; Genesee, 10.2, 10.3; Gratiot, 6.5, 6.3; Ingham, 10.0, 10.0; Ionia, 7.8, 8.1; Livingston, 8.0, 8.1; Montcalm, 7.2, 7.4; Shiawassee, 5.8, 5.8.

IX.—Southwestern Division. Allegan, 9.1, 9.1; Berrien, 7.2, 7.4; Cass, 8.3, 8.4; Van Buren, 9.3, 9.4.

X.—South-central Division. Branch, 9.6, 9.6; Calhoun, 9.0, 9.2; Hillsdale, 10.6, 10.7; Jackson, 10.7, 10.7; Kalamazoo, 10.6, 10.8; Lenawee, 8.5, 8.5; St. Joseph, 12.5, 12.5; Washtenaw, 10.2, 10.3.

XI.—Southeastern Division. Macomb, 10.4, 10.5; Monroe, 9.0, 9.2; Oakland, 10.6, 10.8; Wayne, 13.5, 13.5.

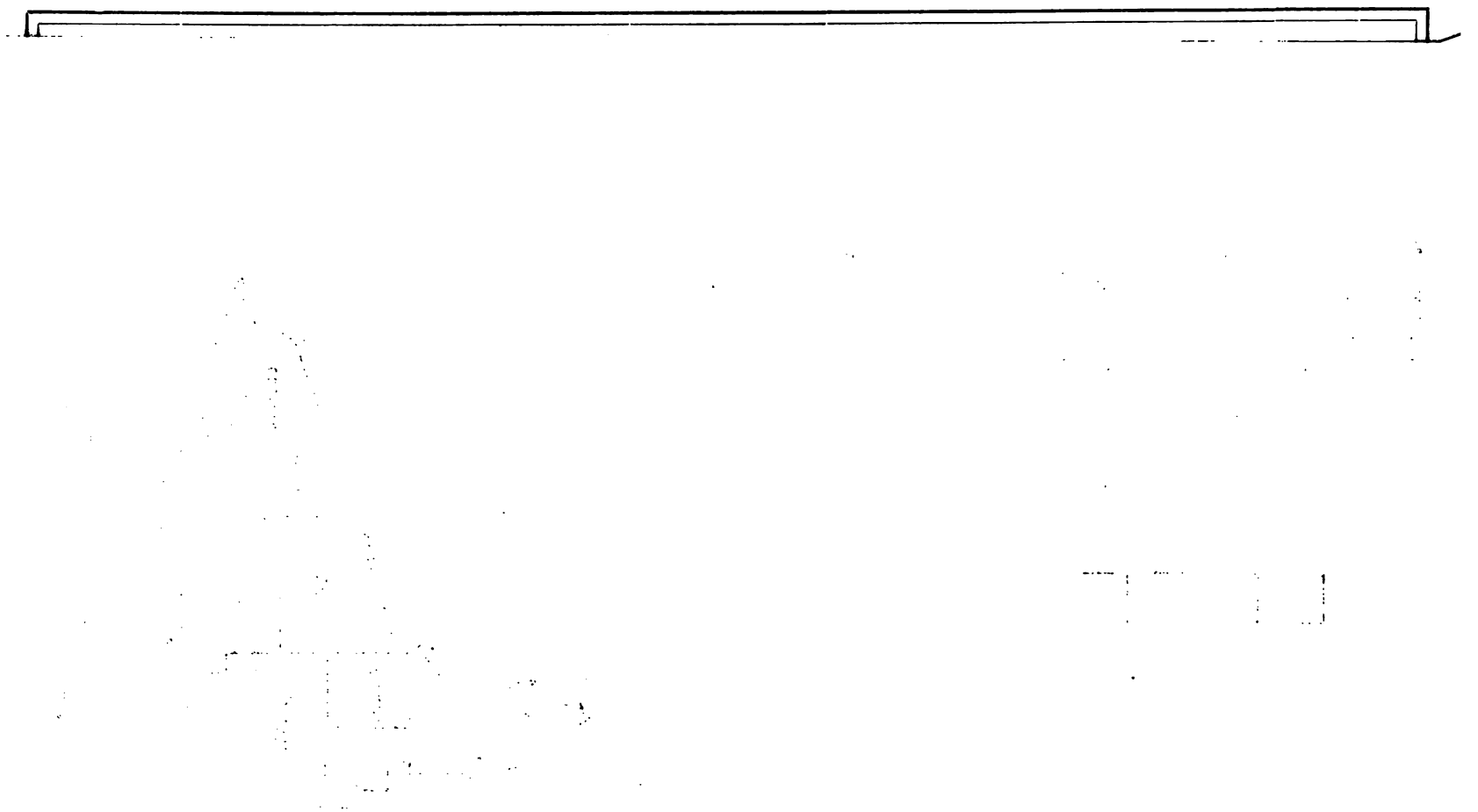


Table 72.—*Geographical divisions of the State used in the study of causes of death.*

I. Upper Peninsular.	II. North-western.	III. Northern.	IV. Northeastern.	V. Western.	VI. North-central.	VII. Eastern.	VIII. Central.	IX. South-western.	X. South-central.	XI. South-eastern.
Alger.	Benzie.	Antrim.	Alcona.	Kent.	Clare.	Arenac.	Barry.	Allegan.	Branch.	Macomb.
Baraga.	Gr. Traverse.	Charlevoix.	Alpena.	Lake.	Gladwin.	Bay.	Clinton.	Berrien.	Calhoun.	Monroe.
Chippewa.	Leelanau.	Cheboygan.	Iosco.	Mason.	Isabella.	Huron.	Eaton.	Cass.	Hillsdale.	Oakland.
Delta.	Manistee.	Crawford.	Montmorency.	Muskegon.	Mecosta.	Lapeer.	Genesee.	Van Buren.	Jackson.	Wayne.
Dickinson.	Manitou.	Emmet.	Ogemaw.	Newaygo.	Midland.	Saginaw.	Gratiot.		Kalamazoo.	
Gogebic.	Wexford.	Kalkaska.	Oscoda.	Oceana.	Missaukee.	Sanilac.	Ingham.		Lenawee.	
Houghton.		Otsego.	Presque Isle.	Ottawa.	Osceola.	St. Clair.	Ionia.		St. Joseph.	
Iron.					Roscommon.	Tuscola.	Livingston.		Washtenaw.	
*Isle Royal.							Montcalm.			
Keweenaw.							Shiawassee.			
Luce.										
Mackinac.										
Marquette.										
Menominee.										
Ontonagon.										
Schoolcraft.										

* Not organized.

It appears that the death-rates stated in Table 12 are sufficiently close to the revised rates based upon a comparison of the populations stated by the censuses of 1890 and 1894 to preclude any serious error except in the cases of some twenty-two counties, eleven of which are in the Upper Peninsula. For these counties the marriage-rates and birth-rates given in Table 12 may be changed in the same ratio as the death-rate,—generally an increase since the population was perhaps overestimated in Table 12,—but the compiler is of the opinion that in nearly all of these counties, even, the rates presented in Table 12 are more nearly correct. For the entire southern part of the State, comprising nine-tenths of the total number of inhabitants, the rates based on either method of estimation are practically identical.

Table 72 shows the counties contained in each geographical division of the State, as subdivided for the purpose of more conveniently studying the distribution of causes of death. This arrangement has been in use in these reports from an early date and much valuable information has been accumulated in connection with it in regard to the distribution of diseases. The map will be useful in showing the relation of these divisions, and also the situation of the different counties of the State to persons not familiar with the geography of Michigan.

The age-distribution of the inhabitants of the several divisions varies widely, and is of importance in considering the distribution of certain diseases. In Table 73 the number and per cent of total deaths of children under five years of age and of persons aged seventy years and over may be seen. This table and also Table 74, which shows the distribution of certain important diseases by geographical divisions, will be referred to again in the text beginning on page 184.

Table 73.—*Comparison, by geographical divisions, of the number and percentage of deaths returned in 1892 from "old age" and of persons aged over 70 years and under 5 years.*

State and geographical divisions.	Deaths at all ages, 1892.	Old age.		Aged 70 and over.		Aged under 5.	
		Number of deaths.	Per cent of deaths at all ages by geographical divisions.	Number of deaths.	Per cent of deaths at all ages by geographical divisions.	Number of deaths.	Per cent of deaths at all ages by geographical divisions.
State	21,729	1,079	5.0	3,462	15.9	7,295	33.6
Upper Peninsular	2,487	40	1.6	76	3.1	1,333	53.6
Northwestern	538	9	1.7	49	9.1	226	42.0
Northern	440	19	4.3	47	10.7	164	37.3
Northeastern	444	14	3.2	27	6.1	200	45.0
Western	2,503	133	5.3	347	13.9	879	35.1
North-central	550	19	3.5	63	11.5	220	40.0
Eastern	3,235	181	5.6	437	13.5	1,169	36.1
Central	2,530	155	6.1	628	24.8	514	20.3
Southwestern	1,131	73	6.5	263	23.3	282	24.9
South-central	3,073	207	6.7	898	29.2	498	16.2
Southeastern	4,798	229	4.8	627	13.1	1,810	37.8

Table 74.—*Comparison, by geographical divisions, of the number and percentage of deaths in 1892 from certain specified causes: Consumption, pneumonia, influenza, diphtheria, croup, scarlet fever, typhoid fever, diarrheal diseases.*

State and geographical divisions.	Deaths from all causes, 1892.	Consumption.		Pneumonia.*		Influenza.		Diphtheria.		Croup.†		Scarlet fever.		Typhoid fever.		Diarrheal diseases.‡	
		Number of deaths.	Per cent of deaths from all causes.	Number of deaths.	Per cent of deaths from all causes.	Number of deaths.	Per cent of deaths from all causes.	Number of deaths.	Per cent of deaths from all causes.	Number of deaths.	Per cent of deaths from all causes.	Number of deaths.	Per cent of deaths from all causes.	Number of deaths.	Per cent of deaths from all causes.	Number of deaths.	Per cent of deaths from all causes.
State	21,729	2,080	9.6	1,298	6.0	907	4.2	1,020	4.7	291	1.3	442	2.0	626	2.9	1,084	4.8
Upper Peninsular	2,487	163	6.6	130	5.2	19	.8	68	2.7	42	1.7	108	4.3	123	4.9	180	7.2
Northwestern	538	58	10.8	22	4.1	25	4.6	2	.4	2	.4	5	.9	10	1.9	22	4.1
Northern	440	34	7.7	26	5.9	16	3.6	30	6.8	6	1.4	5	1.1	6	1.4	27	6.1
Northeastern	444	23	5.2	15	3.4	12	2.7	37	8.3	13	2.9	4	.9	2	.5	17	3.8
Western	2,508	254	10.1	182	7.3	126	5.0	141	5.6	23	.9	28	1.1	87	3.5	133	5.3
North-central	550	56	10.2	30	5.5	32	5.8	10	1.8	2	.4	4	.7	11	2.0	20	3.6
Eastern	3,235	328	10.1	169	5.2	132	4.1	192	5.9	67	2.1	42	1.3	94	2.9	150	4.6
Central	2,530	284	11.2	166	6.6	136	5.4	77	3.0	13	.5	15	.6	50	2.0	87	3.4
Southwestern	1,131	115	10.2	71	6.3	86	7.6	29	2.6	10	.9	12	1.1	28	2.5	35	3.1
South-central	3,073	365	11.9	222	7.2	205	6.7	52	1.7	30	1.0	22	.7	54	1.8	78	2.5
Southeastern	4,798	400	8.3	265	5.5	118	2.5	382	8.0	83	1.7	197	4.1	161	3.4	285	5.9

* Includes 42 cases of typhoid pneumonia, 3 cases of pleuro-pneumonia, and 7 cases of capillary bronchitis.
† Includes 80 cases of membranous croup, specified as such.
‡ Includes diarrhea, dysentery, cholera infantum, cholera (nostras), cholera morbus.

DISCUSSION OF TABLES RELATING TO IMPORTANT DISEASES RETURNED AS CAUSES DEATH IN MICHIGAN DURING THE YEAR 1892.

It is proper at this point to explain the reasons for the alteration in the form of nosological arrangement exhibited in Tables 69, 70, and 71 as compared with that in former registration reports of this State, and to show that no facts of importance have been lost or obscured in the transition, while the greater condensation of the present form enables a much clearer comprehension to be obtained of the important diseases returned as causes of death in Michigan.

It has been already pointed out that many discrepancies existed in the statements made in previous reports as to the deaths from certain specified causes. Accordingly as reference was made to the "Nosological Arrangement" or to the "Alphabetical List," would the data obtained vary, owing to the fact that the latter stood in closer relation to the returns, while numerous "consolidations" were necessary in preparing the former in order to accommodate the causes as returned to the form of Dr. Farr's classification. Neither the alphabetical nor classified lists were satisfactory for reference for this reason, and this failing in these important tables rendered it particularly desirable that a series of tables should be inserted in the reports in which the *same name should refer to the same disease in every case.*

This object might have been attained by taking either the nosological list (deaths by counties) or the alphabetical list (deaths by sex, months of death and periods of age) as a standard and making the other list conform to it. Such was the procedure of Dr. Abbott, in the Massachusetts Registration Report for 1887, where the alphabetical list of diseases by sex, months and ages previously in use was replaced by a nosological arrangement in agreement with the nosological classification employed for counties. To adopt the alphabetical list as the standard would be very objectionable, since, under its arbitrary ordering, diseases closely related in nature are widely separated, and there is no certainty, except by very tedious examination, that *all* the deaths from any desired cause are obtained. On the other hand, it did not seem to be desirable to perpetuate the antiquated statistical nosology previously employed, even on the plea of conformity to other registration reports. In matter of fact such conformity was more apparent than real, scarcely any two of the registration reports in this country including exactly the same diseases under the same Farrean classes and orders.

Dr. Farr's system of nomenclature and classification of causes of death, as approved by the International Statistical Congress held in Paris in 1855, is substantially that employed in the registration reports of Massachusetts, New Hampshire, Ohio, Rhode Island (with modifications from the later classification), Vermont and Michigan,—up to the present report. It is also in use in many municipal registration reports in various States. From the time of its introduction into the English Registrar-General's reports to the year 1883, it had undergone certain changes as applied in different tables, so that the Registrar-General states that for some years prior thereto, "three different classifications of the assigned causes of death had been used in the annual reports from his office." Such condition of the classification, "having this great defect, that the headings with special names, in many cases, did not stand for precisely the same causes of death as identically similar headings in other tables," was the reason that impelled the Registrar-General to introduce in 1883 (Abstracts for 1881) a new and uniform arrangement which has been generally adopted in the English colonies and in some of the States of this country. Among these may be mentioned Alabama, Connecticut, Min-

nesota, Washington and West Virginia. The Province of Ontario uses a condensed form of the old type. Now when we see the terms of the Farrean system employed, such as "Zymotic Diseases," "Constitutional Diseases," etc., we have to consider before we compare them whether the city or State in whose reports they appear makes use of the old or of the later forms of tabulation. In some cases it makes little difference whether one or the other be employed, but in others the variations are of sufficient importance to be worthy of consideration. Thus in the old form of classification croup was ranked among the "Miasmatic" diseases of the "Zymotic" class. The Registrar-General placed croup, "in deference to the classification of the College of Physicians," but with some personal protest, among "Local Diseases," in which place it appears in the latest English reports. Today the tendency is to consider fatal cases of croup, especially if stated to be "membranous," as diphtheria. In the Connecticut registration reports, "membranous croup" is classed with diphtheria, while "catarrhal croup" accompanies bronchitis, pneumonia and other diseases of the respiratory organs, supposed, at the time of the formation of the classification, to be non-specific in character. In Michigan we receive no returns of "catarrhal croup," but few of spasmodic croup, and about one-third of the total number specified as "membranous croup." It is a fair presumption that a large share of the remaining cases of "croup," (not otherwise specified) were diphtheritic in character. It would be a distinct retrogression were we, in the Michigan reports, to separate croup from its close connection with diphtheria, as would be necessary in strict adherence to the prevailing English nosological arrangement.

There are many reasons why Dr. Farr's classification, even in its latest type as exemplified in the English registration reports at present, is unsatisfactory, and why it should be exchanged for a better one as soon as we shall have such an arrangement properly prepared and authoritatively introduced. The old terms designating the orders and classes of causes of death have become largely obsolete, and are even, in some cases, misleading, with our present views of etiology. Dr. Abbott, in a paper before the Massachusetts State Medical Society some two years ago,* made certain severe strictures on the terms employed in the Massachusetts reports (the old system of Dr. Farr), some of which are equally applicable to the latest form of that classification. He says, with much force:—

"In the class of deaths from Developmental Causes, *old age*, for example, a most common term in death certificates, cannot be called a cause of death, much less a disease. It is simply a period of life, and the use of the term in certificates is simply a confession of our inability to give an exact statement of the true cause."

"The first question I have to propose is whether the term *zymotic* as a general name of the first class or division may not be supplanted by some term which is better adapted to the progress of medical science."

"Does the term *miasmatic* properly describe the diseases of the first group of Class I?"

"In Class II of the list now in use (Constitutional Diseases) may be found the most destructive of all diseases in our climate and in our State (tuberculosis). It was placed in this class according to the belief of the profession of fifty years ago. Does not modern observation, and more intimate knowledge of its history, require that it should be placed in the first class with other infectious diseases?"

This last objection, were the others of even less weight, will lead to the discontinuance of Dr. Farr's classification as an approved form for expressing the results of registration. The shifting of such a large number of deaths as are annually recorded in most of the registration reports using this system from "Constitutional Diseases" to "Zymotic Diseases" will quite alter the relations of these classes, and when cancer,

* Medical Communications, 1892; XV, 747.

"dropsy," diabetes and rheumatism (diabetes and rheumatism are in this class according to the later, but not the earlier arrangement; "dropsy" was removed from this class by the later classification to the class of "Ill-defined and not specified causes"), are also removed from "Constitutional Diseases," we shall have practically nothing at all left in that class.

"Developmental Diseases" will undergo almost as great a shrinkage as "Constitutional Diseases" from recognition of the facts that "old age," "still-born," "debility," "infantile" and "teething" are practically equivalent to a return of "unknown" cause of death. It is true that returns of "old age" and "still-born" carry some information in regard to ages of decedents, and that ages of decedents convey some suggestion as to possible modes of death, but these are better studied in the tables specifying ages of decedents in which the influence of age can be studied in all alike.

There will be left of the five classes of the original form, probably only three,—zymotic and local diseases and deaths from violence. Even of these, the first class, zymotic diseases, will probably be otherwise designated (perhaps as specific infectious diseases), and will include many causes of death that are now classed among the local diseases. We shall then have an arrangement somewhat as follows:—

TOTAL DEATHS FROM ALL CAUSES.

A.—DEATHS FROM DISEASE.

I.—*Specific Infectious Diseases*, including small-pox, enteric fever, typhus fever, yellow fever, diphtheria and croup, measles, scarlet fever, malarial fever, tuberculosis (in all forms), whooping-cough, influenza, pneumonia, cerebro-spinal meningitis, erysipelas, septicæmia, Asiatic cholera, dysentery, leprosy, glanders, actinomycosis, rabies, tetanus, possibly cancer, syphilis and all other diseases of which the chief etiological factor is one or more vegetable or animal micro-organisms.

II.—*Local or Organic Diseases*, consisting of all those diseases dependent chiefly on changes in the anatomical or functional constitution of the body, and not due to a specific infection.

B.—DEATHS FROM VIOLENCE, either (1) accidental; (2) homicidal; or (3) suicidal.

Deaths in which the cause is unknown or unspecified may be included in total deaths but cannot be assigned to either deaths from disease or deaths from violence. Under an efficient system of registration based upon physicians' certificates, such deaths become of very slight importance numerically. Still-births and premature births are practically deaths in which the causes, whether affecting the fœtus directly or through the mother, are not distinguished. They may be included in or excluded from total deaths (the latter is the prevailing practice owing to the imperfect registration of still-births in many places), but for practical sanitary use of mortality statistics they should be uniformly excluded. The basis of reference in stating the percentage relations of deaths from any specified disease is properly the total number of deaths from *specified diseases*, deaths from violence, "unknown" causes, still-births and premature births excluded.

In the tables in this report this arrangement has been introduced but partially, and the class of specific infectious diseases distinguished includes only those "dangerous communicable diseases," as defined by the State law, which are in process of restriction by the State Board of Health. It is very desirable that the registration offices of this country unite upon some uniform, modern system of classification, but until this is done it would seem premature to introduce any formal arrangement, beyond that required by the actual necessities of registration in this State.

BASIS OF PROVISIONAL CLASSIFICATION OF CAUSES OF DEATH EMPLOYED IN THIS REPORT.

While it seemed imperative, in the preparation of the tables in the present report relating to causes of death, to recast them so that they should be uniform and consistent with themselves in the facts stated, it was not an easy matter to decide upon the actual changes to be made. Condensation seemed equally desirable with uniformity in order that the facts concerning the most important causes of death might not be buried in a mass of unimportant details, and that thus the data derived from the State system of registration might become of greater practical utility than heretofore to the people of the State.

Were there at present a modern and generally accepted statistical classification of diseases in use, the matter would have been much simplified. The objections to the employment of the later English arrangement, which has at present the greatest vogue, have already been stated, and it seemed inadvisable to go to the labor of throwing the tables into a form which will probably be radically altered in the immediate future. Recognizing, therefore, the fact that no satisfactory nomenclature and classification of causes of death is available, and that there appears to be no immediate prospect of such a classification being introduced into practical use among registration reports, a *temporary or provisional plan* was adopted which should have reference to the special necessities of the registration of deaths in this State, and to the practical uses likely to be made of such statistics by the Michigan public health service. In the preparation of Tables 69, 70 and 71 the following principles were followed, with such variations as seemed to be required by special exigencies:

1. A statistical classification of diseases registered as causes of death should be as succinct as possible without confusion of distinct diseases.

2. Statements in regard to definite diseases are more important and more reliable for general purposes of comparison than those in regard to groups of diseases.

3. The tables should be arranged with especial reference to the principal uses which will be made of them. As a rule the data contained is most valuable for reference by public health officers, and, therefore, should give especial prominence to such diseases as are in course of restriction by the public health service.

4. The classification must bear reference to the source of the returns, and the probable amount of error in the original statements received by the compiling office. When the returns are made by non-medical enumerators, as in Michigan, we can feel sure of only the plainest and most easily recognized characters. When based upon physicians' certificates, and especially if the central registration office correct all doubtful returns by correspondence, the statements are more valuable, and finer distinctions may be made.

5. Where forms of disease are definitely distinguished in only a small proportion of of the returns it may become necessary to make statistical divisions on more comprehensive, although more indefinite, lines.*

* As an example take the case of heart diseases. Out of a total of 864 deaths from heart diseases (not including "heart failure") returned in Michigan for the year 1892, no less than 798 were reported as "heart disease" without any other qualification. There were 6 deaths returned from fatty degeneration, 8 from hypertrophy, etc. Now if these definite forms were separately stated, their number would not only be too small for any valuable conclusions to be drawn, but the average reader would be in danger of concluding that only the small numbers of definitely specified forms of heart diseases had occurred, not considering that many more are included in the general term "heart disease." For this reason the tables state the deaths from "heart disease, etc.," which includes with the number specified only as "heart disease" the definite forms of heart disease referred to in the text on that subject. This is, of course only a provisional arrangement, and is subject to change whenever the registration of causes of death improves in precision sufficiently to warrant finer distinctions. In the meantime, the numbers of all definitely specified causes of death, however small, are preserved for future reference (at present, by means of the alphabetical list, Table 90).

6. It is important that the completed tables shall show certain indefinite returns in order that the possible amount of deficiency in definitely specified diseases on account of such imperfection of registration may be inferred.

7. While various classifications of causes of death may be usefully employed in the same report to exhibit special features of mortality, some one principal arrangement should be chosen which should be carried out uniformly in a complete series of tables exhibiting the essential statistical relations of the deaths registered from all points of view. In these tables the same term should always refer to the same disease or group of diseases, and in case of a change in methods of classification, tables should be prepared of corresponding form for all preceding years of registration in order that comparisons may be readily and accurately made.

IMPORTANT DISEASES AND GROUPS OF DISEASES, 1892.*

(1) TOTAL DEATHS FROM ALL CAUSES, 21,729. This is the gross number of deaths recorded for the year 1892, and contains, besides deaths from disease, 17,578 in number, 1,014 still-births, 78 premature births, 1,144 deaths from violent causes and 1,915 deaths of which the causes were entirely "unknown" or unspecified. Comparison may be made with previous years by means of Table 5, page 13, in which the death-rates per 1,000 population are expressed. It there appears that although a larger number of deaths was registered for this year than for any year preceding, with the exception of 1891, the death-rate for the year, 9.9 per 1,000, is lower than that for any year since 1886.

In Table 50, page 112, total deaths and death-rates are stated for previous years of registration with exclusion of still-births, and also with some distinction of age-periods of decedents. This gives much more useful information than the table that merely compares the gross mortality. Thus, for 1892, we see that the mortality of infants under one year of age compared to the total number of inhabitants of that age was less than for any year since 1885, and the percentage of deaths at that age to deaths at all ages was lower than for any previous year of registration. For children under five years of age both the death-rate and the percentage of total deaths were lower than for any previous year, while the age-period 5 to 14, inclusive, shows a tendency in the same direction. The death-rates for adults, in youth, middle-age and early advanced age, were not excessive, as compared with the immediately preceding years, although above the average of all preceding years of registration, but the death-rate of the aged, including all over 65 years, was the highest known in the history of the State registration. Study of this table thus shows where the brunt of the mortality falls during the year, and prepares us for the individual diseases recorded as causes of death during 1892.

Comparisons of the death-rates in Michigan, exclusive of still-births, with those of other States and countries may be found in Table 9, Part I, and in Table 76, following, extending back to the year 1880. It must be remembered that the Michigan returns are very deficient, and that, consequently, the fluctuations and not the absolute rates may be properly compared. The same caution should be heeded in comparing the rates from individual diseases as stated in Tables 76 to 81. If the Michigan rates be nearly doubled, or, at least, increased by 60 per cent, they will probably be comparable with much less risk of error than if taken as computed directly from the returns.

* The reference numbers in parenthesis before each disease correspond with the *line numbers* in Tables 69, 70 and 71.

Such corrections are not necessary in comparing the rates in Michigan for 1892 with those for previous years. While the accuracy of registration has probably varied somewhat from year to year, such variation has been within comparatively narrow limits, so that the hypothesis of a constant ratio of omissions may be employed without much risk of erroneous conclusions. For some important diseases, series of death-rates have been calculated extending from the first complete calendar year of registration (1869) to the present time (1892), and corresponding series may easily be obtained for any of the diseases or groups of diseases given in Table 71 by using the estimated populations stated in Table 4, or, more conveniently, by means of the logarithms there given. Diagrams illustrative of the variations in the rates of some of the most important diseases, as consumption, pneumonia, diphtheria and croup, typhoid fever, scarlet fever and measles, are also presented. These diagrams were prepared by the State Board of Health from data furnished from the State department, and were kindly loaned for this report by the Secretary of the State Board of Health, Dr. Henry B. Baker.

The distribution of the recorded mortality for 1892 was peculiar, as already pointed out (p. 108), from the fact that a larger number of deaths was returned for January than for any other month. Although January is probably an average month so far as its death-rate is concerned, the long interval that elapses between the occurrence of a death therein and the time of its registration (in May of the following year) has caused this month to stand nearly or quite at the foot of the list in regard to the number of deaths registered. In 1892, for the first time in the history of registration in this State, January exceeded all the other months in the number of deaths reported. The percentage of omissions for lapse of time probably remaining the same as in previous years, the actual number of deaths that occurred in this month must have been excessive; the returns, on their face, give no clue to the remarkable amount of mortality during this part of the year. The causes that seem to have contributed most largely thereto are influenza, pneumonia and consumption, which were especially fatal at advanced periods of age.

(2) SPECIFIED DISEASES, 17,578. This is the total number of deaths reported from *disease*. It excludes deaths from violence, 1,144; still-births, 1,014; premature births, 78, and deaths from "unknown" or unspecified causes, 1,915. These deductions being made, we have a better and more uniform basis of statement for ratios of special diseases to total deaths from all specified diseases, both for the State and counties, than when such ratios were referred to total deaths. In some counties, as in Gogebic for the present year, careless and inaccurate registration may cause a very large number of deaths from unspecified causes to be returned. If the ratio from any specified cause be referred to the total number the per cents will appear too low as compared with any county having a less proportion of unspecified causes of death. Still-births are also subject to great variations in accuracy of registration, in different counties, while it is evident that for sanitary purposes, the most important uses to which these mortality statistics are put, deaths from accidents and other forms of violence have little significance.

(3) ***Dangerous Communicable Diseases, 5,029.*** While all diseases that cause death are dangerous, and all of the specific infectious diseases are, under proper conditions, communicable, this group does not exactly correspond, for the purposes of the present report, with the class of specific infectious diseases. For reasons already stated, it seemed desirable to make a practical division in the arrangement of causes of death in this report based on the efforts at prevention and restriction of certain diseases by the

Michigan State Board of Health. This list, therefore, contains only such diseases (with one trifling exception) as have been put under ban by the health service of the State, and will hence be of special value as an index of the efficiency of the restrictive and preventive methods adopted.

In the case of consumption, the most important disease of all, its position in the list of dangerous communicable diseases for the year 1892 is somewhat anticipatory, since the action of the State Board of Health in regard to it did not take place until September 30, 1893. This is of no practical moment, since it is designed to place all infectious diseases in this list as soon as action is taken upon them by the State Board, and to include them in the table of previous years (Table 71) in the corresponding position.

(4) **Consumption, 2,080.** This number consists only of cases returned as such, or under some equivalent expression, as *tuberculosis*.* It does not include 31 deaths from hemorrhage of the lungs, which might have been added with little risk of error, although this symptom is not necessarily caused by pulmonary tuberculosis. Deaths reported from "lung disease" are probably due to consumption in most cases, the former term being merely a euphemism for the latter. It is probable, also, that a certain number of deaths returned from asthma, bronchitis, pneumonia, and a large proportion of those returned from pleurisy are in reality deaths from consumption. However this may be, the number of deaths returned directly from consumption, as given above, will be found sufficiently representative of the total number that occurred, and may be compared with those registered for previous years (Table 71) in order to show the variations in mortality from this disease.

Consumption was classed among the "Developmental Diseases" of the old classification employed in these reports, and was formerly supposed to depend upon a peculiar diathesis or habit of the body which was transmissible or hereditary in character. The discovery of the *bacillus tuberculosis* by Koch, and the determination of its invariable agency in the causation of tuberculosis of all forms in man and animals, has entirely revolutionized the opinion of the profession in regard to this disease. As well expressed by Prudden, in a paper before the New York Academy of Medicine,† "That there are many contributory factors in the acquirement of this disease—vulnerabilities of the individual, both hereditary and acquired, predisposing vicissitudes of environment—one cannot, it seems to me, deny, nor should he measure lightly. But the one thing without which tuberculosis cannot come to man or beast is the living tubercle bacillus. All the vulnerabilities and predispositions and favoring vicissitudes which we either know or can conceive of, cannot, without this particular germ, light up this particular disease. . . . Slowly but surely we have learned that what once was thought to be hereditary transmission of the disease is often only household poisoning, or, at most, an entailed vulnerability in the presence of the germs, derived from whatever external source. . . . The main point is that tuberculosis is a communicable disease, and that the chief element in its conveyance is the uncared-for sputum of victims of pulmonary tuberculosis."

The Michigan State Board of Health took action, in accordance with the prevailing view, for the restriction of tuberculosis by the following resolution passed September 30, 1893: "*Resolved*, That hereafter, consumption (and other diseases due to the *bacillus tuberculosis*) shall be included in the official list of 'Diseases dangerous to the public health,' referred to in sections 1675 and 1676 of Howell's Statutes, requiring notice by

* According to previous usage of these reports, though not entirely proper, as tuberculosis of other organs than the lungs may be occasionally intended.
† *Transactions*, 1893; p. 21.

householders and physicians to the local health officer, as soon as such a disease is recognized." In the tables in this report consumption heads the list of dangerous communicable diseases (causing, on the average, about twice as many deaths each year as the next most fatal infectious disease, diphtheria), and special attention will be given to the study of its distribution through the State.

In Table 74 the number of deaths and the percentage to total deaths from all causes are given for the eleven geographical divisions of the State. As compared with the corresponding table for 1891, the proportions are more uniform, but the Upper Peninsular, Northern, Northeastern and Southeastern divisions show low percentages for both years. A more satisfactory method is to study the county rates for a period of years. Thus, taking the average of the reported number of deaths from consumption in each county for the years 1888 to 1892, and calculating the rate per 100,000 population of this average, according to the United States census of 1890,—the middle year of the period,—we have the following statement, in which the number immediately after the name of each county expresses the average number of deaths per annum during the five-year period; the second number, in *italics*, the death-rate per 100,000 mean population for that time. Four groups of counties are distinguished: (1) Those in which the mean death-rate from consumption during the years 1888-92 was over 50 per cent above the average rate for the State; (2) counties having rates above the average, but less than 50 per cent above it; (3) counties having rates below the average, but not more than 50 per cent below; (4) counties having rates over 50 per cent below the average. These groups are distinguished on the Map (opposite page 181) by different degrees of color.

DEATHS AND DEATH-RATES FROM CONSUMPTION, BY COUNTIES, 1888-92.

(STATE: Average deaths per annum, 2,209.8; *death-rate, 105.5 per 100,000.*)

Over fifty per cent above the average:—Emmet, 19.4, *221.6*; Wayne, 447.2, *173.9*.

Less than fifty per cent above the average:—Allegan, 41.2, *105.7*; Baraga, 4.0, *131.8*; Benzie, 6.6, *126.0*; Branch, 32.4, *120.9*; Calhoun, 47.4, *109.0*; Cass, 24.2, *115.5*; Eaton, 37.2, *115.9*; Ionia, 35.2, *107.3*; Kalamazoo, 41.6, *105.9*; Kent, 132 8, *120 8*; Leelanau, 9.2, *115.8*; Lenawee, 60.0, *123.8* Macomb, 40.6, *127.6*; Manitou, 1.0, *116.3*; Monroe, 38.2, *118.1*; Muskegon, 49.8, *124.5*; Oakland, 48.2, *116.9*; Saginaw, 96.6, *117.4*; St. Joseph, 36.6, *144.3*; Van Buren, 40.0, *131.0*.

Less than fifty per cent below the average:—Alcona, 3,2, *59.2*; Alpena, 10.8, *69.3*; Arenac, 5.8, *102.1*; Barry, 18.2, *76.5*; Bay, 49.6, *87.9*; Berrien, 37.6, *91.1*; Charlevoix, 7.4, *76.4*; Cheboygan, 9.6, *80.1*; Chippewa, 9.4, *78.2*; Clare, 4.0, *52.9*; Clinton, 21.8, *82.2*; Crawford, 1.8, *60.8*; Delta, 15.2, *99.2*; Dickinson, Iron, Marquette and Menominee (taken together since Dickinson was formed from the three others in 1891), 49.8, *64.2*; Genesee, 41.4, *105.0*; Gogebic, 8.6, *65.3*; Grand Traverse, 13.0, *97.3*; Gratiot, 20.8, *72.6*; Hillsdale, 30.8, *100.5*; Houghton, 25.6, *72.3*; Huron, 20.4, *71.5*; Ingham, 37.4, *99.3*; Iosco, 9.0, *59.2*; Isabella, 18.8, *100.1*; Jackson, 41.0, *91.0*; Kalkaska, 3.2, *62.0*; Keweenaw, 2.6, *89.8*; Lapeer, 20.8, *71.2*; Livingston, 17.0, *81.5*; Mackinac, 5.8, *74.1*; Manistee, 15.2, *62.7*; Mason, 14.6, *89.1*; Mecosta, 17.8, *90.4*; Midland, 7.8, *73.2*; Missaukee, 4.0, *79.2*; Montcalm, 25.6, *78.4*; Oceana, 9.4, *59.9*; Osceola, 12.0, *82.0*; Otsego, 2.8, *65.5*; Ottawa, 32.2, *91.1*; Roscommon, 1.6, *78.7*; Sanilac, 32.8, *100.0*; Schoolcraft, 4.0, *68.8*; Shiawassee, 22.2, *71.7*; St. Clair, 49.6, *95.2*; Tuscola, 33.6, *103.4*; Washtenaw, 44.0, *104.2*; Wexford, 6.6, *58.5*.

Over fifty per cent below the average:—Alger, 0.4, *32.3*; Antrim, 4.6, *44.2*; Gladwin, 0.4, *9.5*; Lake, 2.4, *36.9*; Luce, 0.6, *24.4*; Montmorency, 0.2, *13.4*; Newaygo, 8.8, *43.0*; Ogemaw, 2.6, *46.6*; Ontonagon, 1.8, *47.9*; Oscoda, 1.0, *52.5*; Presque Isle, 1.4, *29.9*.

A map constructed for the year 1892 on the same plan as that for the five-year period shows certain peculiarities that are worthy of remark. Muskegon, Benzie, Baraga and Emmet counties show mortalities over fifty per cent above the average, while Wayne county drops into the class below. The entire southern portion of the State, including the three lower tiers of counties, show death-rates above the average, with the excep-

tion of Allegan, Berrien, Kalamazoo, Barry and Macomb counties. The counties of the Huron peninsula nearly all show higher death-rates than the State average, contrary to the experience of the five-year period.

The question as to whether consumption is increasing or decreasing is of much interest, and since the general adoption of restrictive methods by public health boards, it is a matter of no little practical importance to definitely determine this fact. Public health officials are too apt, when occasion serves, to press the natural fluctuations of disease into their service as corroborative of their particular methods of restriction. Nearly all of the specific infectious diseases display periodic fluctuations (well shown in the diagrams of measles and scarlet fever), which are dependent in part on the natural history of the disease germ, in part on the meteorological conditions that favor the access of these germs to the system, and in part on the organized efforts at restricting and limiting their prevalence. All of these factors must be taken into account by the public health official who claims that his work has resulted in a lessened mortality from any disease. A health officer whose term of service begins, for instance, at the crest of a wave of scarlet fever, is apt to claim, honestly enough, but mistakenly, that his efforts have materially contributed to the decline of the disease. In fact such a decline, possibly not so abrupt or to such an extent, would have occurred under any circumstances, the unprotected material upon which the disease feeds having been consumed. In consumption, a disease of a chronic character and very different in its course from the acute infectious diseases that were first made the subjects of restrictive legislation, it may be assumed that the natural fluctuations of the disease will be of longer periodic length than in the exanthemata, and will accordingly require the examination of statistics extending over longer periods in order to decide as to the natural fluctuations of the disease. The matter is further complicated by the fact that changes in medical fashions of designating diseases and improvements in the diagnosis of disease must be considered in examining statistics of causes of death extending over any considerable interval of time. The same remark applies in examining the statistics of different countries, with varying standards of medical education.

In Table 71 the deaths returned from consumption for each year of registration in Michigan from 1869 to 1892 may be found, and in the following statement the death-rates for each year, based upon the estimated populations given in Table 5, are presented:

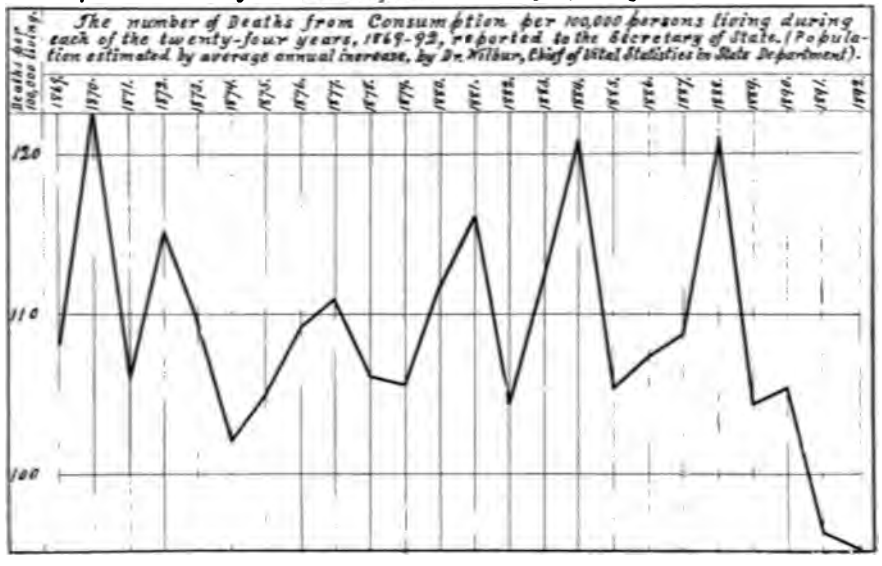
Death-rates from consumption in Michigan per 100,000 population, 1869-92.

Years.	1892.	1891.	1890.	1889.	1888.	1887.	1886.	1885.	1884.	1883.	1882.	1881.
Death-rates..	95.2	96 3	103.4	104.3	121.0	106.7	107.3	105.3	120.8	112.3	104.4	116.1
Years.	1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.
Death-rates..	111.7	105.6	106.1	110.9	109.2	104.9	102.0	109.6	115.1	106.0	122.5	108.1

It would seem that the mortality from consumption in this State has remained nearly the same for the period of twenty-four years covered by the registration returns. For the last two years of registration, 1891 and 1892, a remarkable decrease is seen to have taken place, but this, it is believed by the compiler, is due rather to the large number of deaths of consumptives returned as having been caused by influenza (which

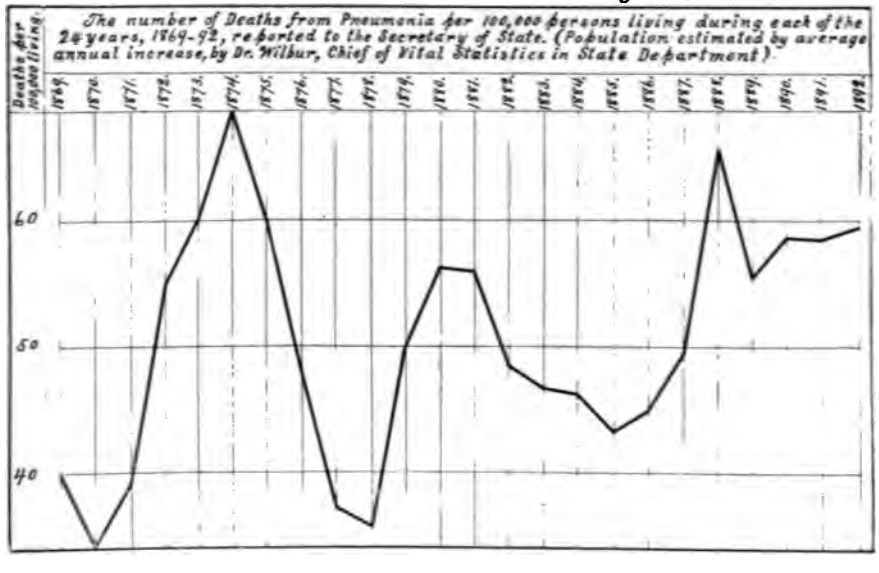
(DIAGRAM III.)

Reported Deaths from Consumption in Michigan, 24 Years, 1869-92.



(DIAGRAM IV.)

Reported Deaths from Pneumonia in Michigan, 24 Years, 1869-92.



undoubtedly accelerated death in many cases, although not the primary cause) than to any actual decrease of the death-rate from tuberculosis. In the Eastern States, in which death-certificates are required and more accurate statements of causes of death are consequently obtained, the death-rates from consumption and other diseases of the respiratory organs show usually a marked increase attendant on the prevalence of influenza.

Examination of Table 78 shows that the mortality from consumption is considerably higher in the Eastern than in the Western States, even after due allowance is made for defects of registration in the latter. In the Western States, however, as in Michigan, the mortality from consumption remains fairly constant through the period of years covered, while in the Eastern States and in England the diminution in the death-rate has been uniform and considerable in amount.

(5) ***Other tubercular diseases, 208:*** (6) **Marasmus, 109;** (7) **Tubercular meningitis, 88;** (8) **Scrofula, 17;** (9) **Tabes mesenterica, 87;** (10) **Other forms of tuberculosis, 12.** Of the deaths from tubercular meningitis, 2 were returned as such and the remainder either as hydrocephalus or "dropsy of brain." Scrofula includes 1 case of "glandular disease." In tabes mesenterica are 36 deaths returned from "consumption of bowels" and 1 case of tubercular peritonitis. Other forms of tuberculosis include 9 deaths from hip-joint disease, and 3 from tubercular laryngitis. The above inclusions are made in order to conform, as far as possible, with the previous usage of these reports, but the supposition that all of the cases included are really tubercular in character is more than doubtful. Thus, nearly all of the returns of marasmus come from a certain hospital in Detroit, and imply, in all probability, merely a wasting disease of any nature, perhaps consequent on cholera infantum or some other intestinal disorder. "Consumption of bowels," although defined as "intestinal tuberculosis" by Foster, is not necessarily intended in common language to signify more than a wasting diarrheal disease. The more correct definition is given by Gould, who refers it to chronic inflammatory diarrhea.

Taken altogether, this group may stand for some important causes of death due to the bacillus tuberculosis, that we do not have accurately returned at present. Many deaths from "unknown" causes, "weakness," "malnutrition," etc., should properly be reported under this head. Much educational work is necessary before we shall have an exact statistical account of the protean forms in which the tubercle bacillus attacks the human organism, and the importance of deriving our information directly from physicians' certificates of causes of death is nowhere more forcibly indicated than in regard to these obscure diseases.

Diphtheria and Croup, 1,311: (11) **Croup, 211;** (12) **Membranous croup, 80;** (13) **Diphtheria, 1,020.** For practical sanitary purposes diphtheria and croup are identical, and are so treated by sanitary (and many registration) authorities at the present day. As far back as February, 1889, the following resolution was unanimously adopted by the Michigan State Board of Health:

"WHEREAS, It is often impossible to discriminate between cases of diphtheria and membranous or inflammatory croup; and

"WHEREAS, Modern researches point to a probable common origin of these diseases;

"*Resolved*, That in the opinion of this Board membranous or inflammatory croup should be classed with diseases communicable and dangerous to the public health and should be reported as such, and the same precautions should be taken in cases of this disease, as regards isolation and disinfection, as in cases recognized as diphtheria."

In this report the deaths from diphtheria, membranous croup and croup (unspecified) are distinguished in the tables as in previous years, but it is recommended that the aggregate number of deaths from the three classes of returns be considered, rather than that reliance be placed on those returned as diphtheria only. In most counties the ratios between deaths from "croup" and diphtheria are quite constant, but in some the tendency is to report fatal cases of what is probably the same disease as croup; in others, as diphtheria.

Next to tuberculosis, diphtheria is the most formidable specific infectious disease commonly prevalent in this State. Its fluctuations during successive years of registration may be studied in the following table (in which deaths from croup are included), or in the diagram, which represents the deaths returned as diphtheria alone. The most remarkable fact in regard to the course of diphtheria in this State is its extensive prevalence in 1881, in which year the mortality from this disease exceeded that from consumption. From 1881 to the present time the death-rate has declined, with some indications of a periodic movement, and under the active restrictive measures employed by the State Board of Health, will probably never again reach its former height.

Death-rates from diphtheria and croup in Michigan per 100,000 population, 1869-92.

Years.	1892.	1891.	1890.	1889.	1888.	1887.	1886.	1885.	1884.	1883.	1882.	1881.
Death-rates.	60.0	63.0	83.0	61.1	59.8	68.2	79.4	74.6	76.4	75.7	102.1	145.2
Years.	1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.
Death-rates..	118.9	110.5	72.8	50.6	34.7	26.9	26.2	29.6	28.2	22.5	20.9	17.0

Some interesting comparisons may be made by means of Table 79 of the relative death-rates from diphtheria and croup in Michigan, certain other States and England during the years 1880-92. It cannot be assumed that diphtheria is any more accurately reported in this State than deaths from all causes, which are known to be deficient to an amount probably not less than 60 per cent of the total number reported. When, therefore, we find, as we do in the examination of Table 79, that the death-rate from diphtheria in Michigan, with no corrections for inaccurate registration, far exceeds the death-rates from this disease in States where registration of deaths is more reliable, we are enabled to gain some idea of the terrible degree of its prevalence in Michigan. For the year 1881 the registered mortality, which is probably not much more than 60 per cent of the actual death-rate, exceeded that recorded for any other State from 1880 to 1892, except for New Jersey in the year 1887-88. Deaths are accurately registered in New Jersey, so that the high Michigan death-rate for 1881 was probably far greater than any recorded elsewhere during the period of years studied. More important than the absolute death-rates recorded, owing to our imperfect and variable systems of registration, are the fluctuations to be noted in examining successive years of registration under the same system. While all of the States included in the table show lower rates at present than those recorded for the period of excessive mortality about 1881, and lower than the secondary crest of prevalence which fell in the years 1887-89, only two of them, Massachusetts aud Michigan, show a fairly constant decrease during the entire period. The tendency appears to be upward during recent years in Indiana,

Ohio, New Jersey, New York and Rhode Island. In Connecticut the recorded mortality has remained nearly stationary for the past decade, with maxima in 1883 and 1889, but of less range than those observed in other States. In England the death-rate from diphtheria is far less than in this country, but there has been a steady increase in recent years.

The distribution of diphtheria (including only deaths reported as such) and of croup may be studied by geographical divisions in Table 74 as returned for the year 1892. There are many differences as compared with the corresponding distribution for 1891, among which may be noted a generally increased percentage in the northern divisions. The Upper Peninsular division forms an exception to this statement, the percentage of deaths from diphtheria in this division being considerably below the average for the State.

A more satisfactory method of studying the geographical distribution is that employed in the study of consumption, namely, taking the average death-rate for a series of years. In the following statement, the average number of deaths in each county for the five-year period 1888-92 is stated, and the corresponding death-rate per 100,000 mean population (that of the census of 1890) is calculated. The results are graphically shown in the Map opposite this page, five groups of counties being distinguished, as follows: (1) Counties having a death-rate from diphtheria (including croup) over fifty per cent above the average for the State; (2) counties with death-rates above the average but less than fifty per cent above it; (3) counties with less than the average death-rate, but less than fifty per cent below it; (4) counties having death-rates over fifty per cent below the average; (5) counties, generally of very sparse population, in which no deaths from diphtheria or croup were reported for the past five years. The number immediately following the name of the county in the list below is the average number of deaths returned for the five-year period, 1888-92; the second number, in *italics*, represents the death-rate:

DEATHS AND DEATH-RATES FROM DIPHTHERIA (INCLUDING CROUP) PER 100,000 POPULATION IN MICHIGAN, BY COUNTIES, 1888-92.

(STATE: Average number of deaths per annum, 1,367.6; *mean death-rate, 65.3.*)

Over fifty per cent above the average:—Alger, 1.8, *145.4;* Cheboygan, 14.6, *121.9;* Dickinson, Iron, Marquette and Menominee (taken together since Dickinson was formed from the three others in 1891). 95.4, *122.9;* Keweenaw, 3.2, *110.5;* Muskegon, 51.6, *129.0;* Saginaw, 90.6, *110.2;* Wayne, 510.4, *198.5.*

Less than fifty per cent above the average:—Arenac, 4.8, *84.4;* Charlevoix, 6.6, *68.2;* Delta, 11.8, *77.0;* Gogebic. 10.0, *76.0;* Jackson, 34.0, *75.5;* Kent, 87.6, *79.7;* Mason, 12.4, *75.7;* Monroe, 18.6, *57.5;* Montmorency, 1.0, *67.2;* Ontonagon, 2.8, *74.5;* Otsego, 3.8, *88.9.*

Less than fifty per cent below the average:—Allegan, 18 2, *46.7;* Alpena, 5.8, *37.3;* Bay, 28.8, *51.1;* Berrien, 15.2, *36.8;* Chippewa, 4.4, *36.7;* Houghton, 19.2. *54.2;* Iosco, 8.2, *53.8;* Lapeer, 14.0, *47.9;* Macomb, 13.0, *40.8;* Manistee, 11.4, *47.1;* Midland, 4.2, *39.4;* Newaygo, 8.6, *42.0;* Ogemaw, 2.6, *46.6;* Ottawa, 22.4, *63.4;* Schoolcraft, 2.8, *48.1;* St. Clair, 27.6, *53.0;* Washtenaw, 15.4, *36.5.*

Over fifty per cent below the average:—Alcona, 1.2, *22.2;* Antrim, 1.8, *17.3;* Baraga, 0.4, *13.2;* Barry, 3.6, *15.2;* Benzie, 0.4, *7.6;* Branch, 4.8, *17.9;* Calhoun, 6.8, *15.6;* Cass, 3.6, *17.2;* Clare, 1.2, *15.8;* Clinton, 8.0, *30.1;* Eaton, 5.0, *15.6;* Emmet, 1.6, *18.3;* Genesee, 10.0, *25.4;* Gladwin, 0.2, *4.8;* Grand Traverse, 2.4, *18.0;* Gratiot, 5.2, *18.2;* Hillsdale, 3.6, *11.7;* Huron, 7.6, *26.6;* Ingham, 9.6, *25.5;* Ionia, 4.8, *14.6;* Isabella, 4.8, *25.5;* Kalamazoo, 11.8, *30.0;* Kalkaska, 0.2, *3.9;* Lake, 1.2, *18.4;* Lenawee, 7.4, *15.3;* Livingston, 6.2. *29.8;* Luce, 0.6, *24.4;* Mackinac, 2.0, *25.5;* Mecosta, 4.0, *20.3;* Missaukee, 0.6, *11.9;* Montcalm, 5.8, *17.8;* Oakland, 13.0, *31.5;* Oceana, 4.6, *29.3;* Osceola, 2,0, *13.7;* Presque Isle, 0.6, *12.8;* Roscommon, 0.2, *9.8;* Sanilac, 10.8, *33.1;* Shiawassee, 7.2, *23.3;* St. Joseph, 2,4, *9.5;* Tuscola, 10.2, *31.4;* Van Buren, 5.0, *16.4;* Wexford, 2.4, *21.3.*

No deaths reported from diphtheria or croup for five years, 1888-92:—Crawford, Leelanau, Manitou, Oscoda. The aggregate population of these four counties in 1894 was only 14,834 persons, of whom 9,396 were in Leelanau county.

A corresponding map made for diphtheria only (for purposes of study; not engraved) shows almost exactly the same distribution for the period as the map representing diphtheria and croup. The exceptions are found only in a few counties from which an unusually large number of fatal cases of croup was returned. Such differences may result from local differences of opinion in medical attendants as to the identity of croup and diphtheria.

(14) **Erysipelas, 64.** This disease is of comparatively small importance as a cause of death in this State. As shown in Table 71 the number of deaths annually reported has decreased since the early years of registration. This decrease is exclusive of deaths from septicæmia which were formerly compiled under this title, but are now separately stated.

(15) **Puerperal fever, 42.** About the same number of deaths has been reported from this cause for each year of registration, which would indicate, with the increased population of the State, a decrease in mortality. There are probably some deaths in each year included under child-birth, peritonitis and septicæmia, which properly belong here, but are not definitely specified in the returns.

(16) **Scarlet fever, 442.** A larger number of deaths was reported from this disease than for any year since 1883. The general course of scarlet fever in Michigan has been characterized by a regular decline in mortality since 1870 with the exception of the years 1882-83 and 1891-92, which were marked by slightly increased death-rates. These facts are well shown in Diagram VII which represents the following figures:

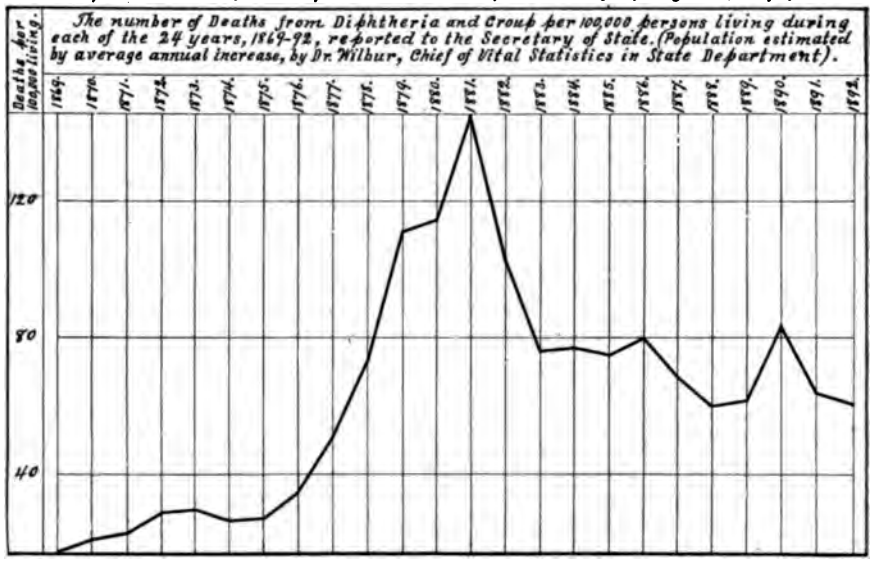
Death-rates from scarlet fever in Michigan per 100,000 population, 1869-92.

Years.	1892.	1891.	1890.	1889.	1888.	1887.	1886.	1885.	1884.	1883.	1882.	1881.
Death-rates..	20.2	18.7	10.6	11.7	16.1	16.3	16.7	13.1	17.9	37.9	34.3	22.8
Years.	1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.
Death-rates..	22.7	26.3	27.7	26.9	27.4	30.0	32.2	43.9	44.3	56.6	72.0	22.1

(17) **Typhoid fever, 626;** (18) **Typho-malarial fever, 23;** (19) **Typhus fever, 6.** There has probably been little or no typhus fever in Michigan in recent years, the few cases so returned being probably intended for typhoid fever. The term *typhus abdominalis*, which a German-speaking physician would perhaps give in a death-certificate in a case of enteric fever, would readily become *typhus* when recorded by a careless enumerator or copied by a clerk ignorant of the significance of the qualifying word "abdominalis." Deaths from "typho-malarial fever" are at present considered for practical sanitary purposes as equivalent to typhoid fever. In the tables the three terms are employed for the purpose of comparison with former reports, but it would be preferable to employ the term enteric fever, especially if the returns were based upon death-certificates from physicians, and in consequence the correctness of the statements made were subject to less doubt than at present.

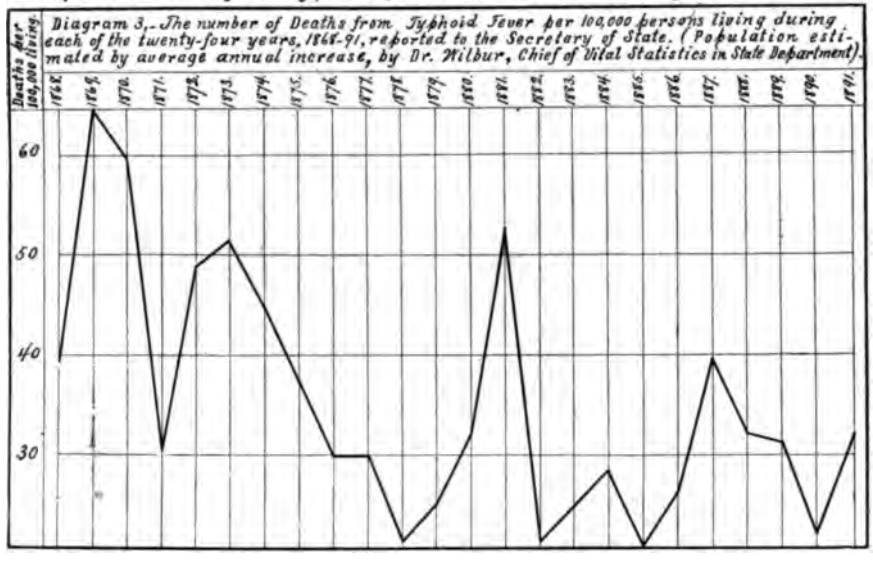
(DIAGRAM V.)

Reported Deaths from Diphtheria and Croup in Michigan, 24 Years, 1869-92.



(DIAGRAM VI.)

Reported deaths from Typhoid fever in Michigan, 24 Years, 1868-91.



In the following table the death-rates from typhoid fever (returned as such) may be compared for the past twenty-four years of registration. Diagram VI closely represents these figures, any differences being due to the fact that the diagram is based upon the statements made in the "Nosological Arrangements" of previous reports, in which a few additional deaths from ill-defined forms of fever were generally included under the head of typhoid fever.

Death-rates from typhoid fever (returned as such) in Michigan per 100,000 population, 1869-92.

Years.	1892.	1891.	1890.	1889.	1888.	1887.	1886.	1885.	1884.	1883.	1882.	1881.
Death-rates..	28.6	32.0	22.2	31.1	31.9	39.3	26.1	20.7	28.2	24.7	26.8	52.5
Years.	1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.
Death-rates..	31.3	24.9	21.3	29.7	29.3	30.7	44.8	51.3	48.7	29.0	43.5	38.3

The comparative study of the mortality from typhoid fever, as presented in Table 80, is of interest, for it shows that after making due allowance for different degrees of accuracy in registration the death-rates from this disease are nearly twice as great in the Western States as in the Eastern States. There appears to be some tendency toward a diminished mortality from this cause in the former group, while in the latter the death-rates show generally a slight increase during the years studied. The contrast is very marked from the changes that have occurred in the English rates, which have diminished nearly 50 per cent in the last decade.

(20) **Glanders, 1.** Only four deaths have been recorded from this disease in Michigan since the establishment of registration. One of these occurred in the present year and was reported from Antrim county.

(21) **Measles, 72.** The measles curve is subject to great fluctuations, as may be seen in Diagram VIII, and the year 1892 was a year of greatly diminished prevalence. The absolute number of deaths returned is less than that for any year since 1885, and is only about one-third of the numbers recorded for 1890 and 1891. The death-rates from this disease based on estimated population are as follows:

Death-rates from measles in Michigan per 100,000 population, 1869-92.

Years.	1892.	1891.	1890.	1889.	1888.	1887.	1886.	1885.	1884.	1883.	1882.	1881.
Death-rates..	3.3	10.5	10.9	5.1	20.6	14.6	6.8	2.0	7.9	14.5	8.7	15.2
Years.	1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.
Death-rates..	7.6	10.5	1.0	4.1	8.1	9.5	3.4	18.6	14.1	5.5	4.7	12.9

(22) **German measles, 2.** German measles or rötheln is of little importance as a cause of death. It is included in the list of dangerous communicable diseases chiefly from the liability of scarlet fever to be mistaken for it, with which disease it has a closer relationship than with measles proper. No deaths appear to have been recorded from this cause prior to 1892, although it is not unlikely that an occasional one has been included among deaths from measles.

(23) **Small-pox, 1.** Only one death was registered from small-pox in 1892,—from Livingston county,—and the total number of deaths for the past ten years amounts only to 31. This disease, once so formidable in its effects on the death-rate, would seem to have been practically annihilated and to have become of merely historical interest, were not the possibility always present of an epidemic being lighted up by neglect of vaccination and proper sanitary measures. Such, indeed, was the case two years later in Detroit—but it is not allowable under the present system of registration to anticipate the regular course of the returns so far as to refer to any matters of timely interest. The facts in regard to the epidemic of small-pox in this State in 1894 will be duly collected (such as are not forgotten) in the spring of 1895, and the compiled results be discussed in the report published in 1896, when all popular interest in them has vanished. The following table presents the death-rates for preceding years:

Death-rates from small-pox in Michigan per 100,000 population, 1869-92.

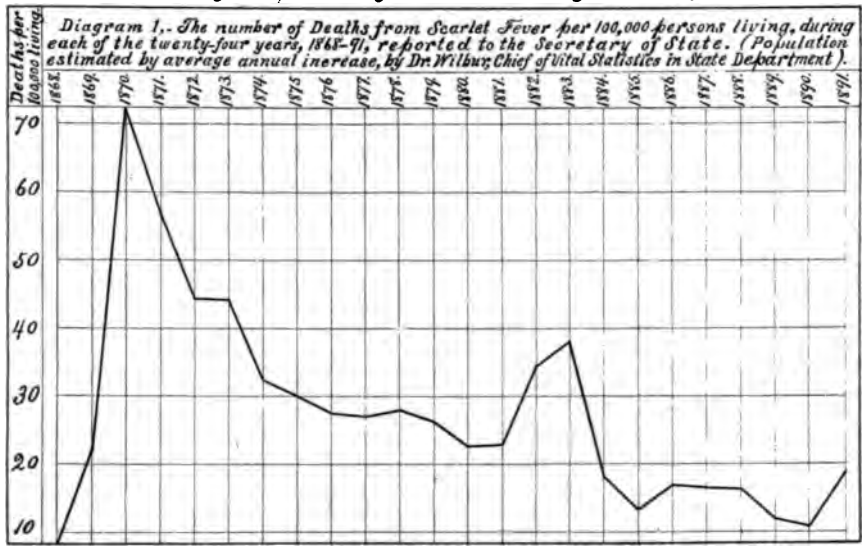
Years.	1892.	1891.	1890.	1889.	1888.	1887.	1886.	1885.	1884.	1883.	1882.	1881.
Death-rates..	0.1	0.1	0.3	0.1	0.2	--------	0.3	0.3	0.2	0.3	5.8	4.9
Years.	1880.	1879.	1878.	1877.	1876	1875.	1874.	1873.	1872.	1871.	1870.	1869.
Death-rates..	0.2	0.4	0.4	6.8	5.2	1.8	1.3	7.0	23.7	6.0	0.8	3.7

(24) **Chicken-pox, 4.** This is the only disease in the list printed in black-faced type and included in the total number of dangerous communicable diseases, that has not been officially declared so by the State Board of Health. Its chief danger is its liability to be mistaken for small-pox, especially at the commencement of an epidemic of the latter when physicians are not upon the alert for the more important disease. In these reports prior to 1891 small-pox and chicken-pox were included under the same head, small-pox, which fact should be remembered in comparing the reports of previous years.

(25) **Whooping-cough, 147.** Measured by the aggregate mortality from each disease since the beginning of registration, whooping-cough and measles are of almost precisely equal importance as causes of death in Michigan. Whooping-cough caused 3,474 deaths during the twenty-four years, 1869–92, according to the returns, while measles caused 3,667. The curve of whooping-cough is far more uniform from year to year than that of measles, which is subject to wide oscillations. For 1892 there were about twice as many deaths from whooping-cough as from measles, but the death-rate from measles for this year, as already mentioned, was unusually low. The age distribution of deaths from whooping-cough is peculiar from the very large proportion of decedents (97.3 per cent in 1892) below five years of age. For measles and scarlet fever

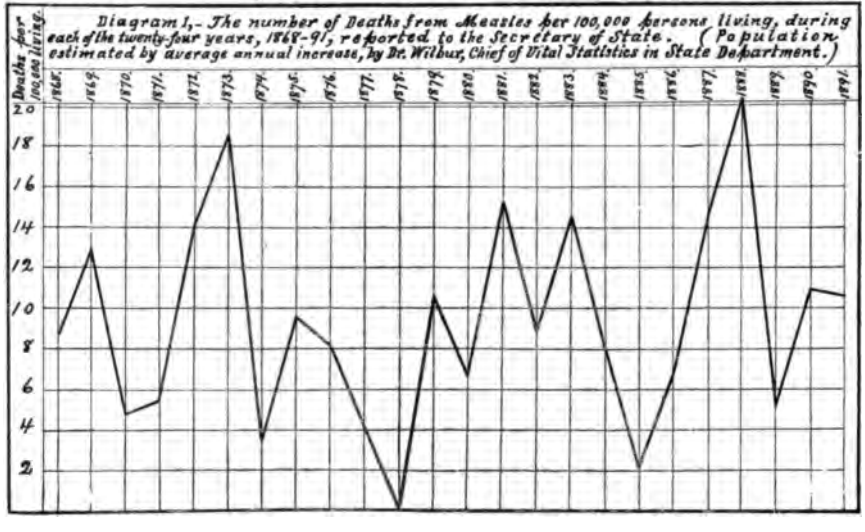
(DIAGRAM VII.)

Reported Deaths from Scarlet fever in Michigan, 24 Years, 1868-91.



(DIAGRAM VIII.)

Reported Deaths from Measles in Michigan, 24 Years, 1868-91.



the percentages of deaths under five years of age were 80.6 and 64.9, respectively. Following is a table giving the death-rates from whooping-cough for the preceding years of registration:

Death-rates from whooping-cough in Michigan per 100,000 population, 1869-92.

Years.	1892.	1891.	1890.	1889.	1888.	1887.	1886.	1885.	1884.	1883.	1882.	1881.
Death-rates..	6.7	7.4	8.6	6.8	8.7	5.6	9.7	7.4	8.8	5.2	5.0	8.4
Years.	1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.
Death-rates..	16.1	10.2	8.5	8.7	12.4	7.2	11.2	15.6	15.1	5.5	10.1	13.9

(26) *Bladder diseases, 50:* (27) Calculus, 11; (28) Cystitis, 22; (29) Bladder disease, etc., 17. These are mostly diseases of elderly persons. Six cases of enlarged prostate are included in "bladder disease, etc.," and also two of rupture of bladder. Calculus and cystitis were separately stated in the old classification employed in these reports, but all other diseases of the bladder were placed under "kidney disease, etc."

(30) *Bowel diseases, 1,631:* (31) Inflammation of bowels, 334; (32) Diarrhea, 277; (33) Cholera infantum, 606; (34) Dysentery, 74; (35) Peritonitis, 89; (36) Bowel disease, etc., 251. Diarrhea includes 25 cases specified as chronic, and dysentery 1 case so returned. Bowel disease, etc., comprises: Appendicitis, 5; abscess, 2; congestion, 9; constipation, 2; disease, 46; hemorrhage, 8; obstruction, 26; ulceration, 9; "cholera," 34; cholera morbus, 43; colic, 17; dropsy, 5; fistula, 1; hernia, 35; piles, 1; worms, 8.

Some of the cases of inflammation of the bowels, and many of those included in "bowel disease, etc," are diarrheal in character. The nature of the returns do not permit of any very exact distinctions being made between those included under different titles. Thus, of the 277 cases of death from diarrhea, no less than 182 were originally specified as "summer complaint," a recognized synonym for cholera infantum, while, on the contrary, many cases of ordinary diarrhea in infants were returned as "cholera infantum." These diseases are best studied in the aggregate, and according to their age-incidence. For this purpose it is very important that distinction of ages below five years should be made. This has not yet been done in these reports, and hence we can only approach the subject by observing that 1.118 of the 1,631 total deaths from bowel diseases occurred in children under five years of age. This is equivalent to 68.5 per cent of the total, and does not include deaths of children from tubercular bowel diseases (specified as such) given above.

According to Holt (quoted by Osler, *Practice of Medicine*, p. 393), cholera infantum is by no means as common as the ordinary dyspeptic diarrhea of children, and occurs in only two or three per cent of the cases of summer diarrhea. The proportion among fatal cases would, of course, be much higher, but it is doubtful if it rises to the percentage indicated by our returns. It is doubtless true, as Russell remarked, "that the certificates in these cases are entirely useless for any separate statistical application; for the numerous expressions, *summer complaint, cholera infantum, diarrhea, enteritis, entero-colitis, gastro-enteritis, intestinal catarrh, gastro-intestinal catarrh* and *muco-enteritis* are employed indiscriminately. . . . According to our returns cholera

infantum is a disease of all seasons, of duration from a few hours to many months, and of occurrence in children up to ten years of age." *

(37) *Brain diseases, 1,534:* (38) Apoplexy, 219; (39) Congestion of brain, 68; (40) Inflammation of brain, 292; (41) Epilepsy, 62; (42) Meningitis, 148; (43) Paralysis, 571; (44) Brain disease, etc., 174. Meningitis includes spinal fever, 32; meningitis, 42; cerebral meningitis, 4; cerebro-spinal meningitis, 7; spinal meningitis, 63. Paralysis includes, besides 542 deaths returned simply as such, 2 from locomotor ataxia; 2 from progressive muscular atrophy; 15 from "creeping paralysis," some of which were probably paralysis agitans; and 10 from "general paralysis." Of the latter, 9 were from Kalamazoo, and were probably cases of general paralysis of the insane. In brain disease, etc., are included: Abscess, 11; disease, 53; embolism, 1; paralysis, 15; softening, 33; chorea, 8; insanity, 53. Congestion of brain is stated separately in this report and in the one for the preceding year. Prior to 1891 this cause of death was included in "brain disease," which fact should be borne in mind in making comparisons with previous years.

(45) Cancer, 558; (46) Tumor, 139. Deaths returned from "tumor" are stated in connection with those from cancer for the reason that the former term is, in many cases, merely a common expression for the latter, and the deaths returned from cancer should, therefore, be somewhat increased to give the true number that occurred. This is, of course, apart from the correction that should be added to all causes of death on account of imperfect returns.

In Table 75, on the opposite page, may be seen the distribution of deaths from cancers and tumors, by sex and according to the parts of the body affected, for the year 1892, and also, for cancers only, for the period of twenty years, 1872-91. Of the whole number of deaths reported from cancer in the twenty years, 42.7 per cent were males and 57.3 per cent females. Excluding from the total number of deaths of males all cases in which the organ affected was unspecified, we have 1,557 cases, of which 996, or 64.0 per cent, were deaths from cancer of the stomach. Among females, the ratio of deaths from cancer of the stomach was less, being 40.6 per cent; 380 deaths or 22.4 per cent were from cancer of the breast, and 263 deaths or 15.5 per cent were cancers of the uterus.

In Table 71 may be seen the total number of deaths from cancer returned for each year of registration from 1869 to 1892. As the population of the State has been increasing during this time, it is necessary to compare the deaths returned from this cause to the enumerated or estimated population for each year in order to ascertain whether the death-rate from this cause is really increasing. The following table shows that this is apparently the case:

Death-rates from cancer in Michigan per 100,000 population, 1869-92.

Years.	1892.	1891.	1890.	1889.	1888.	1887.	1886.	1885.	1884.	1883.	1882.	1881.
Death-rates..	25.5	25.0	25.5	24.0	24.0	23.2	20.5	21.6	19.9	21.6	17.4	18.4
Years.	1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.
Death-rates..	17.4	17.1	17.4	17.7	16.5	14.4	13.8	13.0	10.4	8.5	10.1	9.9

* Transactions of the New York Academy of Medicine, 1874, p. 119.

Table 75.—*Deaths returned from* **cancer** *in Michigan for the year 1892, and for the twenty years, 1872-91, inclusive, specifying the part of the body affected.*

Cancer of—	Year 1892.			Twenty years, 1872-91.		
	Total.	Males.	Females.	Total.	Males.	Females.
All organs	558	246	312	6,664	2,844	3,820
Arm				6	3	3
Back				1	1	
Bladder				18	15	3
Bone	2	2		1	1	
Bowels	15	8	7	125	48	77
Brain	2	2		2	1	1
Breast	21		21	404	24	380
Ear				3	2	1
Eye	1		1	16	8	8
Face	13	10	3	195	144	51
Foot				4	4	
Gall bladder				1		1
Groin				4	3	1
Hand				5	4	1
Head	1	1		33	19	14
Heart				6	2	4
Hip	1		1	1	1	
Jaw	3	3		1	1	
Kidney	1		1	7	6	1
Leg				19	13	6
Lip				3	3	
Liver	21	6	15	149	82	67
Lungs	1		1	18	8	10
Mouth	3	3		83	55	28
Neck	1		1	28	20	8
Nose	1	1		2	2	
Omentum	1		1			
Ovaries	1		1			
Œsophagus				3	1	2
Pancreas	1	1		3	2	1
Rectum	1	1		28	15	13
Shoulder				2	2	
Side				13	2	11
Spleen	1		1			
Spine				5	2	3
Stomach	140	81	59	1,684	996	688
Throat	2	2		92	53	39
Testicles				3	3	
Tongue	2	1	1	21	11	10
Tonsils	1		1			
Unspecified part	302	124	178	3,411	1,287	2,124
Urethra				1		1
Uterus	19		19	263		263

NOTE.—*Deaths returned from* "tumors" *in Michigan, 1892.*—There were 139 deaths, 36 males and 103 females, thus returned, many of which were probably deaths from cancer. Their distribution, by sex and organs affected, was as follows:—Bowels, 3 males, 5 females; brain, 6 males, 5 females; head, 1 female; liver, 1 female; ovarian, 14 females; side, 1 male, 1 female; stomach, 5 males, 5 females; eye, 1 female; groin, 1 male; kidney, 1 female; spine, 1 female; thigh, 1 female; throat, 1 male, 3 females; unspecified, 19 males, 58 females; uterus, 6 females.

In the classification of diseases according to the parts of the body affected, a principle which is used as a minor basis of arrangement in the present classification as well as in the one formerly employed in these reports, it should be remembered that deaths from cancer are not so distributed. Were these deaths properly included under the organs affected, the total number of deaths from diseases of the stomach would be nearly doubled, while the number of deaths from diseases of the liver would be materially increased. The proportion of deaths from cancer referable to other organs would not materially change the statements given. These remarks are also applicable to the tables stating the number and percentage of deaths from each of seven groups of causes given in previous reports, in which tables the deaths were arranged according to this plan.

(47) Childbirth, 244. This number includes 12 deaths specified as caused by abortion or miscarriage; 5 from puerperal convulsions; 1, ectopic gestation; 1, placenta prævia; 2, post partum hemorrhage; 1, puerperal mania; 1, phlegmasia dolens. There are also 42 deaths from puerperal fever not included here but classed under dangerous communicable diseases. The deaths returned from childbirth have remained very uniform for the years contained in Table 71, showing, as there has been a large increase in population in that time, that the death-rate has constantly diminished.

(48) Convulsions, 548. This is an indefinite term, merely expressive of the symptoms in deaths from certain causes. When specified as epileptic, puerperal or uræmic, they are classified elsewhere. Over nine-tenths (91.5 per cent) of the total number were deaths of children under five years of age. According to Dr. Farr's classification these deaths were placed among brain diseases, but it would seem equally reasonable to ascribe many of them to bowel disorders of infants. We should expect in this case, however, to find an excessive number reported for the months of July, August and September, which is not the case.

(49) Diabetes, 69. Deaths thus returned have usually been considered to be from diabetes mellitus, although rarely so specified. The peculiar age-distribution of decedents as seen in Table 69 may throw some doubt upon this opinion. Diabetes mellitus is a disease of adult life, and with the exception of the deaths recorded for the age-periods from 5 to 20, but few deaths occur until the age of 50 and upwards is reached. The deaths in children and young adults from this cause may, possibly, be really from other affections associated with polyuria.

(50) Dropsy, 389. This is another indefinite return of cause of death which would be practically eliminated from registration reports under an efficient system of registration. In all cases of "dropsy," the disease responsible for that condition should be stated, whether cardiac, renal or other. Were the statements of causes of death based upon physicians' certificates, there would be hope for improvement in this respect, but under the present registration law these indefinite returns will continue to constitute a large percentage of total deaths.

(51) Fever, 129. This includes bilious fever, 9; catarrhal fever, 8; gastric fever, 8; nervous fever, 1; fever, unspecified, 103. The deaths returned simply as "fever" may in some instances be enteric or other definite forms of fever. The absence of specification prevents proper classification. The other forms included are all of a somewhat indefinite or ambiguous character.

(52) Malarial fever, 146. Besides 115 cases so specified, there were included 16 deaths from "congestive chills," 10 from intermittent and 5 from remittent fever. Malarial diseases have steadily diminished in Michigan for the period of time covered by Table 71. The deaths reported annually from this cause at present are about the same

numerically as were returned twenty years ago when the State had only about one-half of its present population.

(53) *Heart diseases, 1,329:* (54) Pericarditis, 97; (55) Heart disease, etc., 864; (56) "Heart failure," 368. Pericarditis includes only two cases returned as such, the remainder being returned as hydropericardium, or "dropsy of heart." Heart disease, etc., includes, besides 798 deaths returned simply as "heart disease," the following more definitely specified forms: Fatty degeneration, 6; hypertrophy, 8; neuralgia (angina pectoris), 21; endocarditis, 2; paralysis, 20; rupture, 1; valvular disease, 8. It does not include 368 cases of "heart failure," which were separately stated this year as in 1891. For preceding years, as shown in Table 71, these deaths were included in heart disease. They are generally equivalent to deaths with cause unspecified,—so returned either through ignorance or carelessness,—and probably imply no actual heart disease. For this reason the statistics of heart disease at present are not comparable with those of years antedating the common use of this pernicious term.

(57) Influenza, 907. This was the last year of the prevalence of epidemic influenza in this State, and the majority of the deaths reported from this cause occurred in the first two months of the year. Other diseases, notably consumption and lung diseases, showed unusually high death-rates for these months and were doubtless influenced by the presence of the epidemic. As usual, the brunt of the mortality from this cause was borne by the very young and by persons of advanced age. Table 71 is very interesting as showing the small number of deaths reported from influenza for the years prior to 1890, and the great mortality from this cause in 1890, 1891 and 1892. The total numbers for these years and their distribution by months, as returned, are given in the following table:

Deaths in Michigan from influenza ("la grippe"), by months, according to the returns for the years 1889-92.

Years.	Total for year.	Months.												
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
1889	176	30	28	17	11	6	7	2	2	4	8	19	41	1
1890	1,084	174	210	154	133	79	60	44	53	36	46	37	56	2
1891	1,076	110	83	96	249	110	62	48	31	48	37	38	160	4
1892	907	351	209	99	58	35	24	18	19	17	19	30	28	....

(58) *Kidney diseases, 442:* (59) Inflammation of kidneys, 332; (60) Kidney disease, etc., 110. Inflammation of kidneys includes 319 cases specified as Bright's disease, and 13 as such. Under kidney disease, etc., are 96 deaths so returned; 2 from abscess, 1 hemorrhage, and 11 as uræmia. Kidney diseases appear to be increasing in this State during the period of years covered by Table 71. This may be, as has been observed elsewhere, on account of better diagnosis, and also, in part, from changes in fashion in medical nomenclature. Many deaths that would have been returned simply as "dropsy" in former years, would at present be ascribed to some form of Bright's disease.

(61) Liver disease, etc., 121. This includes, besides 51 cases returned as such, 1 from "dropsy of liver;" 3 from "disease of gall;" 6 from gall-stone; 18 from jaundice; 11 from abscess; 3 from cirrhosis; 7 from congestion; 14 from enlargement; 7 from inflam-

mation. The returns under this head do not suggest much accuracy of statement, and are probably little to be relied upon.

(62) *Lung diseases (not including consumption), 1,765:* (63) Asthma, 65; (64) Bronchitis, 184; (65) Pleurisy, 30; (66) Pneumonia, 1,298; (67) Congestion of lungs, 87; (68) Lung disease, etc., 101. Among the 184 deaths from bronchitis are 7 returned as chronic bronchitis. Pneumonia includes 3 from pleuro-pneumonia; 42 from typhoid pneumonia; and 7 from capillary bronchitis. Under "lung disease, etc.," are 56 returned as lung disease; 31 from hemorrhage of lungs (both of these terms imply tuberculosis in the great majority of cases); 9 from abscess; 4 from œdema; 1 from collapse. Congestion of lungs is stated separately for 1891 and 1892 because, in the opinion of the compiler, it is merely a local expression for pneumonia in the majority of cases. In previous years deaths so returned were included in "lung disease," which term, likewise, is a common localism for consumption.

The most important of the causes of death included in this group is pneumonia. As seen in Table 71 a much higher mortality has been registered from this disease during the past five years than for the immediately preceding years of registration. This increase began in 1888, before the epidemic of influenza could be regarded as a possible factor in increasing the number reported from this cause. While many deaths from pneumonia may have been induced by a preliminary attack of influenza, and so should be referred, for the ultimate cause of death to that disease, the tendency is so strong in the Michigan registration returns to refer deaths to "la grippe," with no statement of the immediate cause of death, that it would seem more likely that pneumonia is understated than overstated for these years. Following is a table showing the number of deaths from pneumonia in each month as returned for the past ten years; the correspondences between the deaths from this cause and from influenza, as given above, may be remarked:

Deaths returned from pneumonia in Michigan, by months, for the years 1883–92, with average for the ten-year period.

Years.	Totals.	Months of death, 1883-92.												
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
1883	827	80	73	110	111	96	45	35	45	36	48	63	84	1
1884	840	77	114	114	90	75	41	38	45	38	32	76	96	4
1885	804	66	112	136	96	70	38	27	29	47	48	47	87	1
1886	857	60	72	129	108	70	51	34	33	37	53	81	128	1
1887	970	93	125	135	126	81	46	32	40	55	73	74	89	1
1888	1,313	112	164	200	159	189	80	43	40	79	72	82	142	1
1889	1,132	134	115	153	153	84	55	52	52	51	85	88	113	2
1890 *	1,224	135	124	135	139	90	53	57	48	53	68	116	152	4
1891	1,248	122	108	132	197	116	64	33	55	44	64	106	204	3
1892	1,298	285	168	122	133	91	66	60	43	50	71	91	116	2
Average for 10 years, 1883-92	1,051	121	118	137	131	91	54	41	43	49	61	82	121	2

* By recount of returns, the figures given in the report for this year being incorrect.

The following table, which is graphically represented by Diagram IV, shows the death-rates from pneumonia for each year of registration from 1869 to 1892, the rates being based upon the estimated populations for each year:

Death-rates from pneumonia in Michigan per 100,000 population, 1869-92.

Years.	1892.	1891.	1890.	1889.	1888.	1887.	1886.	1885.	1884.	1883.	1882.	1881.
Death-rates..	59.4	58.3	58.5	55.3	65.6	49.6	44.3	43.1	46.2	46.6	48.3	55.9
Years.	1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.
Death-rates..	56.2	49.9	35.7	37.2	47.7	60.0	68.6	60.1	55.0	39.2	34.2	39.9

(69) Rheumatism, 149. Included in this number are rheumatism of heart, 29; inflammatory rheumatism, 22; sciatica, 7, besides 91 deaths simply returned as such. While rheumatism is of great importance as a cause of sickness in Michigan, it is of less interest as a cause of mortality.

(70) Septicæmia, 167. This represents an indefinite form of return, the majority of the cases being reported as "blood poisoning." Whether after wounds or injuries or after parturition is not specified except in a few cases which have been included under the proper heads. In the early reports deaths from septicæmia were classed with deaths from erysipelas under the latter title, which fact should be borne in mind in consulting them.

(71) Spine disease, etc., 74. Another indefinite return, it being uncertain whether disease of the spinal cord or of the vertebræ is intended.

(72) *Stomach diseases, 178:* (73) Inflammation of stomach, 53; (74) Stomach disease, etc., 125. The latter term includes, besides 57 deaths from "stomach disease," 14 from dyspepsia; 19 from indigestion; 2 from stricture of œsophagus; 4 from abscess; 4 from congestion; 2 from "consumption;" 3 from hæmetemesis; 1 from neuralgia, and 19 from ulcer.

(75) Syphilis, 11. Deaths from this disease are probably not fully reported in Michigan. This has been the experience of countries where the registration of causes of death is far more precise than in this State, and it is not likely that our statistics, collected as they are from the friends and relatives of decedents, would show even the approximate number of deaths from this cause. It would seem certain, however, that many deaths of children in cities and many cases of still-births are the results of syphilitic infection. Thus the 109 deaths from "marasmus," placed in accordance with former custom in these reports under tubercular diseases, may have been in part syphilitic, or, indeed, may have been neither tubercular nor syphilitic.

(76) Unclassified, 1,949. Under this head may be found the deaths from diseases of an indefinite character or of small importance numerically. They are as follows: Abscess (part unspecified), 73; Addison's disease, 1; anæmia, 7; aneurism, 1; disease of arteries, 2; disease of blood, 2; rupture of blood-vessel, 15; disease of bone, 4; canker, 13; carbuncle, 3; catarrh, 9; cold, 35; congestion, 15; cough, 1; cyanosis, 1; debility, 223; nervous debility, 45; eczema, 9; gangrene, 20; hemorrhage, 48; Hodgkin's disease, 1; inanition, 39; infantile, 12; inflammation, 52; intemperance, 34; laryngitis, 6; leucocythæmia, 1; malformation, 6; mouth disease, 10; mumps, 4; disease of nerves, 1; neu-

ralgia, 8; old age, 1,079; ovarian disease, 7; puberty, 1; rachitis, 1; salpingitis, 4; seasickness, 2; spleen disease, 5; stricture, 6; stricture of urethra, 1; teething, 69; tetanus, 7; throat disease, 16; inflammation of throat, 4; paralysis of throat, 1; thrush, 9; trismus neonatorum, 2; tonsilitis, 20; turn of life, 4; disease of uterus, 7; inflammation of uterus, 3.

The numbers of deaths not classified in Table 71 bear about the same proportion to total deaths except for the six years, 1884–89, inclusive. The reason for their increase in these years is due to an eccentricity in methods of compilation explained in the last report (page 190): deaths of old persons and of infants returned in these years with the causes unspecified were arbitrarily compiled as "old age" and "infantile," thus increasing the number of deaths in Developmental Diseases, and showing an *apparent* improvement in accuracy of registration. Such improvement was entirely illusory, as comparison was made with previous years in which deaths from unspecified causes were compiled as "unknown." It is impossible to determine the exact number of deaths thus treated, but if the proper deductions could be made from "old age" and "infantile" for those years, and such deaths could be also removed from specified diseases, in which they do not properly belong, it is probable that the relations of these groups would correspond better to those obtaining in other years of registration.

COMPARATIVE MORTALITY.

Vital Statistics is essentially a comparative science, and its results to be of the greatest value must represent a wide experience. It is not enough for any State, or even country, to simply collect, tabulate and study its own special statistics. The full meaning of vital data cannot be known until comparisons are made with similar data collected from other States and countries, whereby their relative values are made manifest. It is a great object with vital statisticians at the present day to improve the methods of collection of data and to introduce uniform methods of compilation and expression of results in order that such comparisons may be correctly and readily made. Such, indeed, was one of the principal objects sought for in the passage of the present Michigan registration law (disappointing as have been its results in practice), and one of the greatest advantages that we may hope to derive from the substitution of a more efficient registration act will be the certainty with which comparative statements in regard to the public health of Michigan and other States can be made.

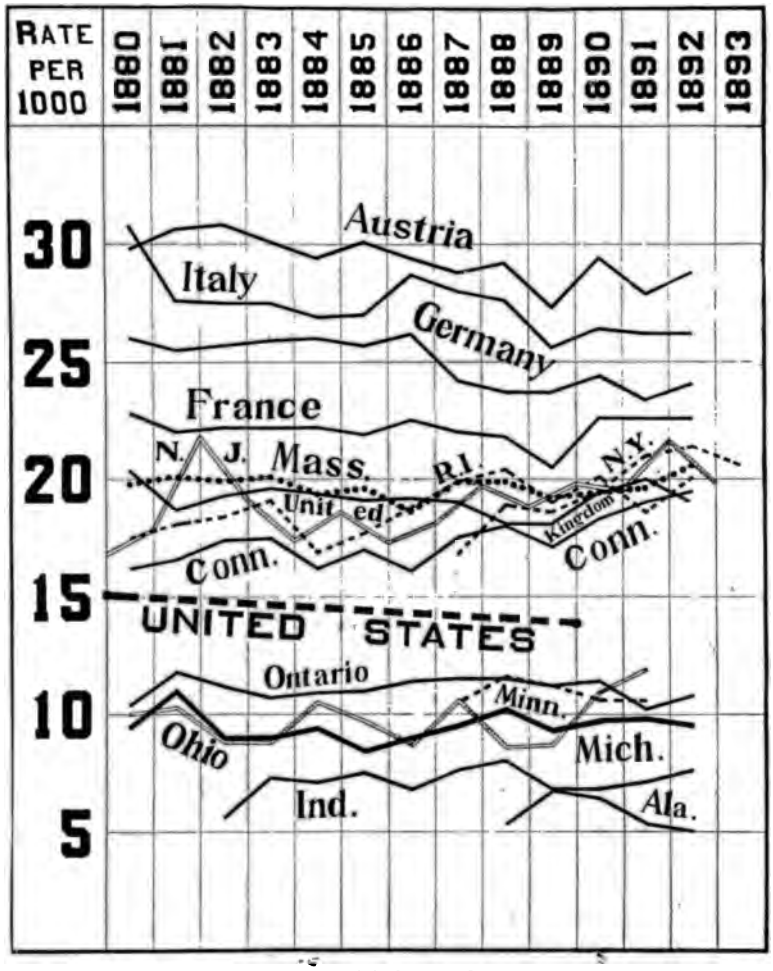
The following tables present some comparative death-rates that are worthy of consideration despite the admitted imperfection of the numbers given for Michigan and certain other States. Diagram IX graphically represents the figures of Table 76, and in explanation thereof the compiler may be permitted to quote the following remarks made originally in a paper before the State Medical Society:

"Imperfect as they are today, these State registration systems are the only means by which we can study the mortality of the United States as a whole as it changes during the years lying between the decennial censuses. The absolute rates, except in certain of the Eastern States, are so faulty as to be of little weight. But assuming that in any State the percentage of omissions is substantially constant from one year to another, the fluctuations in recorded mortality in States having even very imperfect systems of registration ought to correspond on a reduced scale with the variations observed in States having more accurate systems, and the importance of such study, I will again observe, is emphasized from the fact that it is all we have to show the changes in death-rates for the country as a whole.

"In the diagram that I have prepared to illustrate this point, the gross mortalities of

(DIAGRAM IX.)

COMPARATIVE MORTALITY



ACCURACY OF REGISTRATION SHOULD ALWAYS BE CONSIDERED IN COMPARING DEATH-RATES.

several States and European countries are compared, and, I believe, the general coincidences of the wave-crests of mortality in the States of this country for the years 1881, 1887–88 and 1890, and in both Europe and America for the year 1890, are sufficiently marked. In the latter case, the sharp rise in Europe from epidemic influenza appears to be followed by a decline for the following year, whereas for this country the death-rates continue to rise during 1891 and 1892. In referring to this diagram, the caution 'Accuracy of registration should always be considered in comparing death-rates' must be borne in mind, and it should be further considered that the age and sex constitution of a population is a very important factor in its death-rate, and that corrections for these, even in the cases of the European death-rates, cannot at present be applied.

"A point of interest in the comparison of the changes in mortality rates of the several States represented with the change in the rate of the United States as a whole, as indicated by the registered deaths of the tenth and eleventh censuses, is that instead of showing a decrease from 1880 to 1890, a constant rate, or possibly a slight increase in mortality is indicated. In this case, the inferences derived from a study of the rates of the different States probably stand closer to the truth than the indications of the census enumeration, and fully corroborate the opinion of Dr. Billings, who states that 'as the result of several different calculations . . . I have concluded that the death-rate for the whole United States [in 1890] was about 18 per 1,000, or about the same that it was in 1880.' "

Table 76.—*Death-rates from* **all causes** *per 1,000 living population in Michigan, certain States and foreign countries for the years 1880-92, inclusive.**

Countries and State.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.
Austria	*29.8*	30.6	30.8	30.1	29.4	30.1	29.4	28.9	29.2	27.3	*29.4*	27.9	28.8	.....
France	22.8	*22.0*	22.2	22.2	22.2	21.9	*22.5*	22.0	21.8	20.5	22.6	*22.6*	22.6	.....
Germany	*26.0*	25.5	25.7	25.9	26.0	*25.7*	26.2	24.2	23.7	23.7	*24.4*	23.4	24.1	.....
Italy	30.8	*27.6*	27.5	27.5	26.9	27.0	28.7	28.0	27.6	25.6	26.4	*26.2*	26.2	.....
United Kingdom	20.4	*18.7*	19.3	19.6	19.4	19.1	19.2	19.0	18.1	18.1	19.4	*20.0*	19.0	.....
United States	*15.1*	.....	.....	.....	.....	.....	.....	.....	.....	.....	*14.0*	.....	.....	.....
Alabama	.....	.....	.....	.....	.....	.....	.....	.....	5.3	6.7	*6.4*	5.3	5.0	.....
Connecticut	*16.2*	16.5	17.4	17.5	16.2	17.0	16.1	17.5	18.0	17.1	*18.3*	19.0	19.5	.....
Indiana	.....	.....	5.6	7.3	7.1	7.5	6.8	7.6	8.0	6.8	*6.8*	7.1	7.6	.....
Massachusetts	*19.8*	20.1	19.9	20.1	19.4	*19.6*	18.6	19.9	19.9	19.2	*19.4*	19.6	20.6	.....
Michigan	*9.4*	11.0	9.0	9.0	*9.4*	8.4	9.0	9.5	10.2	9.3	*9.7*	9.8	9.5	.....
Minnesota	.....	.....	.....	.....	.....	.....	.....	10.5	11.6	11.2	*10.6*	10.6	.....	.....
Ohio	*10.0*	10.3	8.8	8.8	10.5	9.7	8.7	10.6	8.6	8.7	*10.9*	11.9	.....	.....
New Jersey	*16.8*	17.9	21.8	19.1	17.4	*18.6*	17.3	18.1	19.7	18.8	*19.8*	19.5	21.6	19.8
New York	.....	.....	.....	.....	.....	.....	.....	16.8	18.9	18.6	*19.5*	21.0	21.4	20.6
Rhode Island	*17.5*	18.1	18.4	19.1	16.9	*17.7*	18.8	19.9	20.4	19.0	*20.1*	18.6	20.1	.....
Ontario	10.4	*11.8*	11.2	10.7	10 9	11.0	11.4	11.5	11.5	11.2	11.4	*10.2*	10.8	.....

* Death-rates for census years in *italics*. Still-births are not included in the rates except for Ontario and the United States censuses. The registration year of Indiana ends on September 30; that of Ohio on March 31, and of New Jersey o . June 3). In the diagram and table the statistics of Indiana and Ohio are placed in the calendar year to which they chiefly belong. The rate given for New Jersey in the table for 1893, for example, should be understood to represent the year 1892-93, and is so shown in the diagram. The United States censuses are for the years ending June 1, 1880 and 1890. In all other cases the registration years are calendar years.

EXPLANATION OF DIAGRAM IX.

In Table 76 may be found the death-rates represented for the various States and countries from 1880 to 1892. The authority for the European rates is the table of international statistics published in the latest English Registrar-General's Report (London, 1894). For Massachusetts, the death-rates are those given by the "Standard Table," issued by Dr. S. W. Abbott, Secretary of the State Board of Health. The rates for Rhode Island are those stated in the Fortieth Annual Registration Report, page 150, excepting only the year 1890, for which the rate should be 20.1 instead of 20.7, as printed in the report. Massachusetts and Rhode Island are the only States for which a series of vital rates can be obtained for successive years of registration, based upon carefully estimated populations for inter-census years, from their official publications. In all other cases the registered number of deaths for each year was obtained from the registration reports, or from special lists kindly supplied by the officer in charge of vital statistics in each State. Series of populations were then calculated for inter-census years, based on the population stated for 1880 and 1890 by the Compendium of the Eleventh Census, Part I, using also the State censuses (1885) when such were taken. The method of calculation assumed that the total gain of population between censuses was equally distributed among the inter-census years. For Michigan, and probably for many other States of this country in which immigration is nearly as large an element of growth as natural increase, this method is more correct than the usual assumption that population increases in geometrical ratio. For Ontario, the provincial censuses of 1881 and 1891 were used. In all cases, except Ontario and the United States census, still-births are not included in deaths for the purpose of this comparison.

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Table 77 gives some interesting comparisons of the death-rates from important causes of death in Michigan, Massachusetts and England during the twenty years, 1871-90 by means of averages of five-year periods. These averages are taken directly from the Registrar-General's report for England, and, for Massachusetts, were calculated from the yearly averages stated in the registration reports of that State. Concerning the latter there may be some question, as the rates may not have been subjected to revision after census years. For Michigan, the rates stated were obtained directly from the five-year averages given in Table 75 of the last report (based upon the "Nosological Arrangement"). Whatever minor discrepancies may appear, this table probably represents fairly well the general tendencies of the diseases represented, and may be safely employed with the proviso *that the Michigan rates represent about 60 per cent of actual mortality, while the rates for Massachusetts and England are very nearly complete.*

* From the latter, figures were obtained that exceed for certain years those taken from the annual reports and shown in the diagram for New York. The chief difference is for 1890, for which year the death-rate should be increased nearly 1 per 1,000. There were also estimates of additional deaths occurring in towns not making returns (10,000 for 1887), but these are properly omitted, as the object of the diagram is to show only the actual results of registration.

Table 77.—*Death-rates per 100,000 population, from certain specified causes, in Michigan, according to the returns,* for the five-year periods, 1871–75, 1876–80, 1881–85, 1886–90, compared with the corresponding rates for Massachusetts and England.*

Causes of death.	State or country.	Deaths per 100,000 population.			
		Five years, 1871–75.	Five years, 1876–80.	Five years, 1881–85.	Five years, 1886–90.
All causes	Michigan	987.1	889.5	983.8	1,012.5
	Massachusetts	2,227.3	2,016.8	2,137.7	2,152.4
	England	2,196.2	2,079.1	1,940.3	1,889.5
Consumption	Michigan	108.4	110.0	113.3	111.0
	Massachusetts	355.5	320.0	324.7	289.4
	England	221.8	204.0	183.0	163.5
Pneumonia	Michigan	56.3	44.4	47.7	54.2
	Massachusetts	150.3	146.3	165.7	178.4
Heart diseases	Michigan	22.3	26.4	36.1	47.0
	Massachusetts	81.7	91.7	121.8	151.9
	England	125.7	141.5	146.7	168.6
Diphtheria	Michigan	14.5	62.2	74.5	48.8
	Massachusetts	33.4	127.7	68.2	64.7
	England	12.1	12.2	15.6	17.0
Croup	Michigan	12.1	15.3	19.4	21.4
	Massachusetts	32.3	35.7	30.7	24.3
	England	18.4	15.4	16.3	12.6
Small-pox	Michigan	7.7	2.5	2.2	.1
	Massachusetts	28.1	1.3	1.3	.2
	England	41.1	7.8	7.8	1.3
Measles	Michigan	10.5	6.3	9.5	11.6
	Massachusetts	14.9	8.8	11.0	11.1
	England	37.3	38.5	41.3	46.8
Whooping-cough	Michigan	10.9	11.3	7.0	6.8
	Massachusetts	20.3	17.9	13.4	14.1
	England	49.9	52.7	45.9	44 4
Scarlet fever	Michigan	41.0	26.1	25.1	14.2
	Massachusetts	58.1	42.0	27.5	18.4
	England	75.9	68.0	43.6	24.1
Typhoid fever	Michigan	41.1	27.7	30.5	30.1
	Massachusetts	84.7	46.3	51.5	44.1
	England	37.4	27.7	21.6	17.9

* The returns for Michigan, under the present system of registration, are very imperfect. An idea of the deficiency that exists may be gained by comparing the numbers of deaths from all causes, as given above, for Michigan, Massachusetts and England.

Table 77.—CONTINUED.—*Death-rates in Michigan, Massachusetts and England compared.*

Causes of death.	State or country.	Deaths per 100,000 population.			
		Five years, 1871-75.	Five years, 1876-80.	Five years, 1881-85.	Five years, 1886-90.
Cholera infantum	Michigan	21.1	22.6	32.6	33.6
	Massachusetts	162.9	107.7	109.3	108.9
Diarrhea and dysentery	Michigan	47.4	28.2	27.5	27.2
	Massachusetts	54.5	50.8	44.6	41.4
	England	100.0	83.2	65.6	66.7
Convulsions	Michigan	20.9	19.2	21.7	22.2
	Massachusetts	39.4	35.5	39.1	42.8
	England	111.1	97.1	84.8	77.0
Malarial diseases	Michigan	12.0	8.0	10.1	8.7
	Massachusetts	.7	.4	1.3	1.5
	England	.8	.7	1.1	.6
Puerperal fever	Michigan	3.1	1.9	2.2	1.6
	Massachusetts	5.3	4.6	6.4	3.8
	England	8.7	6.2	9.3	7.6
Erysipelas	Michigan	9.2	5.3	4.4	3.1
	Massachusetts	15.0	12.1	12.9	9.3
	England	10.6	8.1	8.3	5.4
Rheumatism	Michigan	5.4	4.7	6.6	7.3
	Massachusetts	11.3	10.1	11.6	10.2
	England	12.7	13.9	13.2	13.2
Bright's disease	Michigan	.9	2.7	8.9	10.7
	Massachusetts	16.7	22.6	32.9	48.8
Diabetes	Michigan	2.5	2.3	3.1	3.4
	Massachusetts	3.7	4.3	5.7	7.6
	England	3.6	4.0	5.1	6.2
Cancer	Michigan	12.2	17.3	19.8	23.4
	Massachusetts	37.6	46.4	56.3	62.6
	England	44.6	49.5	54.8	63.2
Intemperance	Michigan	1.8	.9	1.0	.9
	Massachusetts	6.9	4.5	6.7	6.2
	England	3.8	4.2	4.8	5.6
Accidental	Michigan	46.4	47.4	50.6	51.8
	Massachusetts	90.0	77.4	85.6	84.2
	England	67.1	63.0	58.0	54.4
Suicide	Michigan	3.3	4.0	4.6	4.9
	Massachusetts	8.2	8.4	9.4	8.3
	England	6.6	7.4	7.5	7.9

Table 77.—CONCLUDED.—*Death-rates in Michigan, Massachusetts and England compared.*

Causes of death.	State or country.	Deaths per 100,000 population.			
		Five years, 1871-75.	Five years, 1876-80.	Five years, 1881-85.	Five years, 1886-90.
Homicide	Michigan	.9	.7	1.1	1.2
	Massachusetts	1.7	1.1	1.0	.8
	England	1.7	1.4	1.3	1.1
Still-born	Michigan	27.9	47.2	48.4	57.6
	Massachusetts	93.2	75.7	85.5	96.5
Old age	Michigan	30.3	36.0	41.3	48.9
	Massachusetts	106.8	97.0	107.3	96.5

Tables 78, 79, 80 and 81 contain comparative rates of consumption, diphtheria and croup, typhoid fever and scarlet fever, respectively, in Michigan, certain States and in England during each of the years, 1880-92. The data must be used subject to the same cautions referred to in discussing the comparative rates from all causes given in Table 76,—which table and accompanying diagram form a sort of correction and guide in their use. It may be assumed that the deficiency of enumeration of any specified disease is about the same as the deficiency in the enumeration of deaths from all causes. No special remarks will be made at this place on the fluctuations of these diseases in the several States, but some comparisons derived from these tables may be found in the general discussion of causes of death beginning on page 188.

Table 78.—*Death-rates from* **consumption** *per 100,000 population in Michigan, certain other states and England for the years 1880-92.*

Countries and States.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
England	186.9	182.5	185.0	188.0	182.7	177.0	173.9	161.5	156.8	157.3	168.2	159.9	146.8
United States	182.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	163.2	.....	.....
Alabama	.....	.....	.....	.....	.....	.....	.....	.....	48.4	74.5	65.0	56.0	52.3
Connecticut	213.1	221.1	224.9	229.9	210.1	207.7	195.7	201.4	206.6	198.8	206.9	187.2	179.8
Indiana	....	.....	66.8	86.8	103.3	102.1	93.2	97.4	95.0	83.5	86.4	89.2	88.0
Massachusetts	308.1	324.5	317.9	316.0	303.7	306.6	295.1	285.6	270.8	256.5	258.6	238.1	242.2
Michigan	111.7	116.1	104.4	112.3	120.8	105.3	107.3	108.7	121.0	104.3	105.4	96.3	95.2
Minnesota*	.....	.....	.....	.....	.....	.....	.....	104.5	114.2	109.1	113.0	109.4	.....
Ohio	121.8	140.0	111.8	102.6	109.2	111.0	121.6	100.4	104.9	100.9	99.6	94.4	.....
New Jersey	239.9	257.6	292.0	256.0	257.5	259.8	244.4	271.6	243.7	244.3	253.9	238.8	236.5
New York	.....	.....	.....	.....	.....	.....	.....	202.8	212.9	209.8	230.6	220.8	218.0
Rhode Island	235.8	252.4	258.7	261.3	247.4	257.3	264.6	221.3	243.1	215.6	246.5	209.2	209.7
Ontario	113.1	124.6	126.8	127.3	118.4	115.5	119.6	125.2	122.3	116.1	119.1	112.1	120.9

* Includes all tubercular diseases.

Table 79.—*Death-rates from* **diphtheria and croup** *per 100,000 population in Michigan, certain other States and England, for the years 1880-92.*

Countries and States.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
England	24.7	25.9	32.7	33.0	36.2	32.0	28.3	30.3	30.0	30.3	28.8	26.4	29.8
United States	111.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	66.6	.....	.....
Alabama	.....	.....	.....	.....	.....	.....	.....	.....	6.2	10.3	7.7	5.7	6.7
Connecticut	82.4	80.5	68.7	96.4	75.7	72.9	80.7	68.8	77.1	97.7	74.8	74.6	70.3
Indiana	.....	.....	13.0	25.0	17.9	32.7	28.8	40.0	26.6	25.6	28.7	38.9	48.4
Massachusetts	134.3	131.4	96.0	86.4	86.2	78.4	78.0	79.2	86.6	101.7	72.6	52.9	61.4
Michigan	113.9	145.2	102.1	75.7	76.4	74.6	79.4	68.2	59.5	61.1	83.0	63.0	60.0
Minnesota	.....	.....	.....	.....	.....	.....	.....	89.9	88.8	91.5	75.0	67.8	.....
Ohio	69.8	41.1	29.8	22.3	17.3	18.0	56.6	40.7	47.7	31.1	42.6	48.4	.....
New Jersey	77.2	97.2	123.7	94.0	82.2	117.1	99.4	113.5	147.7	111.5	109.0	117.5	117.5
New York	.....	.....	.....	.....	.....	.....	.....	113.4	110.9	99.1	81.9	83.3	95.8
Rhode Island	78.8	112.4	61.9	56.6	66.6	63.4	101.8	124.7	82.1	78.3	85.1	47.8	49.2
Ontario	65.7	83.4	63.7	41.3	33.7	50.2	69.5	87.5	70.8	52.9	42.5	44.8	41.5

Table 80.—*Death-rates from* **typhoid fever** *per 100,000 population in Michigan, certain other States and England for the years 1880-92.*

Countries and States.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
England	26.1	21.2	22.9	22.8	23.6	17.5	18.4	18.5	17.2	17.6	17.9	16.8	13.7
United States	45.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	43.2	.....	.....
Alabama	.....	.....	.....	.....	.....	.....	.....	.....	33.7	29.1	29.6	24.4	22.4
Connecticut	38.9	40.5	50.0	44.1	41.8	33.2	35.0	27.5	40.5	38.3	41.8	39.7	40.1
Indiana	.....	.....	23.8	30.1	28.9	35.9	28.4	33.8	40.8	37.2	33.9	32.4	28.0
Massachusetts	49.5	59.1	58.5	45.8	45.8	39.5	40.0	44.8	44.6	40.9	37.3	35.6	34.9
Michigan	31.3	52.5	26.8	24.7	28.2	20.7	26.1	39.3	31.9	30.6	22.2	32.0	28.6
Minnesota	.....	.....	.....	.....	.....	.....	.....	60.1	53.9	45.2	32.1	39.9	.....
Ohio	43.7	61.7	28.9	22.6	34.5	27.4	29.8	39.2	40.4	35.0	41.8	34.0	.....
New Jersey	33.0	49.5	74.3	46.3	51.3	50.2	41.6	38.8	45.0	51.3	54.1	47.0	41.5
New York	.....	.....	.....	.....	.....	.....	.....	23.2	25.5	26.2	26.9	31.6	26.9
Rhode Island	51.0	41.5	74.4	81.5	42.8	34.5	38.7	36.1	68.1	40.0	31.0	42.1	36.7
Ontario	19.5	32.0	28.6	23.9	24.8	23.1	19.1	27.9	25.7	27.1	25.9	35.0	.....

Table 81.—*Death-rates from* **scarlet fever** *per 100,000 population in Michigan, certain other States and England, for the years 1880-92.*

Countries and States.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
England	67.5	54.8	52.1	47.5	40.2	23.3	21.8	28.2	22.6	23.5	24.2	17.1	19.0
United States	32.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Alabama	.....	.....	.....	.....	.....	.....	.....	.....	.3	1.0	.9	.6	.5
Connecticut	14.8	19.1	54.4	45.9	30.9	41.8	16.8	16.5	19.4	11.4	9.0	19.6	36.3
Indiana	.....	.....	3.4	5.6	8.6	9.4	12.8	8.4	7.5	5.8	5.7	9.9	8.1
Massachusetts	32.2	21.9	17.2	30.6	32.8	30.2	16.6	28.9	23.8	8.5	8.8	10.7	28.2
Michigan	22.7	22.8	34.3	37.9	17.9	13.1	15.7	16.3	16.1	11.7	10.6	18.7	20.2
Minnesota	.....	.....	.....	.....	.....	.....	.....	16.4	11.8	26.6	12.6	15.3	.....
Ohio	28.4	17.1	19.1	11.7	11.2	8.9	11.0	8.6	9.1	10.1	9.5	14.8	.....
New Jersey	50.7	43.0	109.8	70.0	43.8	50.5	16.9	19.0	41.6	37.8	14.5	19.5	66.7
New York	.....	.....	.....	.....	.....	.....	.....	22.1	42.2	35.7	15.2	37.0	35.2
Rhode Island	169.2	48.9	15.6	11.6	32.5	29.9	28.2	82.9	62.9	15.1	4.6	9.3	18.5
Ontario	21.5	24.4	28.0	20.6	19.3	15.7	12.9	5.7	6.4	7.6	7.2	.....	.....

DEATHS FROM VIOLENCE IN MICHIGAN, 1892.

The category of deaths from violent causes comprises three general heads: (1) deaths from accidental injuries; (2) suicides, and (3) deaths caused by homicidal violence. All deaths returned simply as due to drowning, poison, etc., the circumstances attending being otherwise unspecified, are presumed to be accidental. Doubtless a few suicidal cases are thus included. Under "homicide" most of the instances are returned as "murder." The statements given in the returns are not sufficiently definite to determine the legal character of the crime involved, and accordingly all are grouped under the general term.

In Table 90 may be found statements of the number of deaths reported from each of these classes by sex, months of death, and periods of age of decedents, and also, under the general heading "accidental," the numbers returned from the chief causes of accidental death, namely, burning, drowning, heat and sunstroke, gunshot-wounds, lightning, mining accidents, poison, railroad accidents and injuries from horses and vehicles. The numbers returned for several preceding years of registration are also shown in connection with those for 1892 for convenient reference and comparison.

Table 82, following, presents a detailed statement of the total number of deaths in the State in 1892 from these causes and from certain minor causes included in one group under the heading "all other casualties" in the table. The distribution of the principal causes of violent deaths is given for the counties of the State in Table 83, and Tables 84 and 85, following, present certain data relative to suicidal deaths in Michigan for the year 1892 and for the period of nineteen years extending from 1874 to 1892, inclusive.

Table 82.—*Deaths from violence in Michigan in 1892, causes specified.*

Manner of death.	Number.
TOTAL NUMBER OF DEATHS FROM VIOLENT CAUSES	1,144
I.—ACCIDENTAL	1,020
II.—SUICIDAL	107
III.—HOMICIDAL	17
I.—ACCIDENTAL	*1,020*
Burning	69
Drowning	164
Heat and sunstroke	28
Gunshot	53
Lightning	10
Mining accidents	59
Poison (not stated as suicidal)	37
Railroad accidents and injuries	74
Vehicles and horses	45
All other casualties	*491*
Animals other than horses	8
Asphyxia	27
Birth, Injury at	10
Electricity	2
Explosion	15
Exposure	2
Fall	38
Falling tree	19
Fractures	42
Freezing	4
Fright	2
All other casualties.—*Continued.*	
Impure milk	1
Machinery, Injuries from	18
Outdoor employments, Injury in	21
Scalding	25
Surgical operation	18
Unspecified cause or injury	229
II.—SUICIDAL	*107*
Drowning	7
Hanging	9
Jumping from window	1
Poison	*12*
Aconite	1
Corrosive sublimate	1
Morphine	2
"Rough on rats"	1
Unspecified	7
Shooting	8
Unspecified	70
III.—HOMICIDAL	*17*
Killed by neck-yoke	1
Stabbing	1
Shooting	3
"Supposed to have been murdered"	1
"Murdered by husband"	1
"Murdered"—not further specified	10

Table 83.—*Deaths from violence in Michigan in 1892, by counties.*

State and counties.	Total deaths from violence, 1892.	I.—Accidents.									II.—Suicides.	III.—Homicides.
		Total.	Burning.	Drowning.	Gunshot.	Mining.	Poison.	Railroad.	Vehicles, etc.	All others.		
State	1,144	1,020	69	164	53	59	37	74	45	519	107	17
Alcona	3	3								3		
Alger	4	4		2						2		
Allegan	13	9			1		2			6	4	
Alpena	9	9		5	1				1	2		
Antrim	7	7		3			1			3		
Arenac												
Baraga	5	5		2				1		2		
Barry	13	10		2	3		1	2		2	3	
Bay	33	27	6	5	3			3		10	4	2
Benzie	5	5			1		1			3		
Berrien	15	13	2	2	2					7	1	1
Branch	7	6						1	1	4	1	
Calhoun	20	18	3		3		1	2	1	8	2	
Cass	9	8	1	1	1		1		1	3		1
Charlevoix	13	12		2						10	1	
Cheboygan	6	5		4						1	1	
Chippewa	9	9	1	2				2		4		
Clare	2	1	1								1	
Clinton	17	15	3		1		1		1	9	2	
Crawford	2	2								2		
Delta	11	10	1	1	1			1	1	5	1	
Dickinson	21	20	1	3		9		1		6	1	
Eaton	17	13	1	2	2			3	1	4	3	1
Emmet	3	3	1	1						1		
Genesee	15	14		2	1		1	2	1	7	1	
Gladwin	1	1								1		
Gogebic	64	63		1		33	1	3		25	1	
Grand Traverse	7	7					1			6		
Gratiot	10	10	1	1	1				1	6		
Hillsdale	7	4					1	2		1	3	
Houghton	30	28	1	6		9				12	2	
Huron	12	12	2	2	1	1		1		5		
Ingham	15	10		1			2			7	5	
Ionia	12	12	2		1		1		3	5		

Table 83.—CONTINUED.—*Deaths from violence, by counties, 1892.*

Counties.	Total deaths from violence, 1892.	I.—Accidents.									II.—Suicides.	III.—Homicides.
		Total.	Burning.	Drowning.	Gunshot.	Mining.	Poison.	Railroad.	Vehicles, etc.	All others.		
Iosco	10	8	.....	4	.....	.....	.....	.....	.....	4	1	1
Iron	10	10	1	1	.....	3	.....	1	.....	4	.....	.....
Isabella	7	6	1	.....	.....	.....	1	1	.....	3	1	.....
Jackson	9	8	2	1	.....	.....	.....	2	2	1	1	.....
Kalamazoo	15	10	.....	1	1	.....	.....	1	1	6	4	1
Kalkaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kent	57	50	4	3	3	.....	4	7	3	26	7	.....
Keweenaw	1	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Lake	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lapeer	10	8	1	1	1	.....	.....	1	2	2	2	.....
Leelanau	1	1	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Lenawee	12	9	2	1	.....	.....	.....	1	1	4	3	.....
Livingston	9	8	1	1	.....	.....	.....	.....	.....	6	1	.....
Luce	3	3	.....	.....	1	.....	.....	.....	.....	2	.....	.....
Mackinac	2	2	.....	.....	.....	.....	.....	.....	.....	2	.....	.....
Macomb	18	14	.....	5	1	.....	1	.....	.....	7	3	1
Manistee	14	12	2	1	.....	.....	.....	.....	1	8	2	.....
Manitou	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Marquette	49	46	4	10	.....	3	1	1	.....	27	2	1
Mason	5	5	.....	2	.....	.....	.....	.....	.....	3	.....	.....
Mecosta	12	11	.....	2	.....	.....	.....	.....	.....	9	1	.....
Menominee	11	10	.....	3	.....	.....	.....	.....	1	6	1	.....
Midland	10	9	.....	3	.....	.....	.....	.....	.....	6	1	.....
Missaukee	5	5	.....	.....	.....	.....	.....	.....	.....	5	.....	.....
Monroe	14	12	1	.....	1	.....	.....	2	1	7	2	.....
Montcalm	13	12	.....	4	.....	.....	.....	.....	1	7	1	.....
Montmorency	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Muskegon	17	17	2	1	.....	.....	2	1	.....	11	.....	.....
Newaygo	7	7	1	1	.....	.....	1	.....	.....	4	.....	.....
Oakland	20	14	.....	.....	1	.....	1	5	2	5	5	1
Oceana	8	7	1	.....	2	.....	1	1	.....	2	.....	1
Ogemaw	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ontonagon	2	2	.....	.....	.....	.....	.....	.....	.....	2	.....	.....
Osceola	9	9	.....	2	.....	.....	.....	.....	2	5	.....	.....
Oscoda	1	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....

Table 83.—CONCLUDED.—*Deaths from violence, by counties, 1892.*

Counties.	Total deaths from violence, 1892.	I.—Accidents.									II.—Suicides.	III.—Homicides.
		Total.	Burning.	Drowning.	Gunshot.	Mining.	Poison.	Railroad.	Vehicles, etc.	All others.		
Otsego	2	2	1							1		
Ottawa	11	11	2	4					2	3		
Presque Isle	2	1		1							1	
Roscommon												
Saginaw	72	61	2	11	3			9	2	34	9	2
Sanilac	8	8		2	1		1			4		
Schoolcraft	4	3	1		1			1				1
Shiawassee	9	7		1			2	1		3	2	
St. Clair	39	35		13	2			4	3	13	3	1
St. Joseph	15	12	2				1	2		7	3	
Tuscola	9	9		3	1				1	4		
Van Buren	16	12		1			1		1	9	3	1
Washtenaw	12	12	2	1	1				1	7		
Wayne	164	152	9	30	10		5	8	5	85	11	1
Wexford	3	3							1	2		

I.—ACCIDENTAL DEATHS, 1892.

Of the 1,020 deaths from accidental injuries in 1892, a large majority, 849, were males; 171 were females. The preponderance of males exists in all the modes of injury shown in Table 82, except in the case of deaths from burning, in which the females are in excess (42 females to 27 males) and from poison, in which the proportion of the sexes is more nearly equal, although from this cause the ratio is over two to one. For a few minor forms of injury, as, for example, fracture of the hip, the deaths of females are more numerous in 1892 as in most years preceding.

Burning.—Of the 69 deaths from burning in 1892, 8 were stated to have occurred in connection with the burning of dwellings or other buildings; 3, 2 males and 1 female, were said to have been caused by the explosion of kerosene, and 4, 2 of each sex, by the explosion of gasoline. It should be remembered, should any use be made of these statements, that not all the deaths that actually occurred in the State from this or any other cause were returned by the enumerators, and that in but a small proportion of those returned were the particulars relating to the manner of the accident definitely specified. In addition to the number of deaths from burning there were 25 deaths from scalding, included under miscellaneous casualties. These should be added to give the total deaths from burning and scalding, 94, for comparison with previous reports.

Drowning.—Of the 164 deaths from accidental drowning reported in 1892, 118 were from counties bordering upon the Great Lakes. Many of the deaths in these counties were drownings that occurred in rivers or inland lakes; the number of deaths due to dis-

asters to shipping in Michigan waters cannot be learned from the registration returns. With a coast-line of over 1,600 miles, Michigan is peculiarly interested in the navigation of the lakes, and many of the deaths caused by wrecks and accidents to shipping, occurring within her waters, are properly included in the vital statistics of the State. The following statement of the number of vessels, loss of lives and property on the Great Lakes from December 17, 1885, to November 15, 1893, is from a report issued by the Secretary of Agriculture:

Lake.	Vessels.	Estimated loss.	Lives lost.
Superior	82	$1,290,589	63
Michigan	85	1,834,168	139
Huron	44	901,330	67
Erie	50	808,462	134
Ontario	16	116,300	18
Totals	227	$4,951,099	420

In the year 1892 there were 46 lives lost by wrecks in Michigan waters. In addition to this number 14 lives were lost by the foundering of the steamer *Nashua* on Lake Huron at a point near the Canadian coast, thus making a total of 60 lives lost on the lakes touching the State. The particulars, as given in the report referred to above, were as follows:

LAKE SUPERIOR.—Steamer *Western Reserve* foundered and sank in deep water about 9 p. m., August 30, 1892, the wind being fresh from the northwest with some sea. The crew and 6 passengers took to the lifeboats; 19 of the crew in one boat and 3 of the crew and 6 passengers in the second; the boat containing the 19 persons ran before the sea and wind, the wind increasing in force and the sea becoming heavier during the night, and about 7 a. m., when about one mile from shore, and some eight miles above Deer Park (Luce county), the boat capsized in the breakers and all were drowned with the exception of the wheelsman, who was the sole survivor of the wreck; nothing was ever heard of the other boat. Some of the wreckage came ashore at Point Mamainse, Ont. This fine steel steamer was light bound for Two Harbors, for cargo, and the estimated value of the vessel was $320,000. Lives lost, 27.

LAKE SUPERIOR.—Schooner *Zach Chandler* stranded through stress of weather in a heavy gale and snowstorm, after her sails were blown away, October 29, 1892. One life lost. Estimated value of vessel and cargo, $23,500.

LAKE MICHIGAN.—Steamer *W. H. Gilcher* foundered and became a total loss in a heavy northwest gale October 28, 1892. The entire crew was lost and nothing was ever heard of the wreck. Estimated value of vessel, $200,000; cargo, $15,000; total, $215,000. This fine steel steamer was laden with coal bound for Milwaukee, Wis., and was supposed to have foundered near the Fox Islands (part of Manitou county), with a crew of 18 persons.

LAKE HURON.—Steamer *Nashua* foundered about fifteen miles off Point Clark, Ont., October 4, 1892, in a heavy northwest gale. The hull drifted ashore four days later bottom up, a total loss, with the boiler and machinery out, and the stern of the vessel broken off. Estimated value of vessel and cargo, $17,280 Lives lost, 14.

Mining Accidents.—Mining accidents were responsible for 59 deaths in 1892 according to the returns. They were distributed as shown in Table 83: 33 in Gogebic county, 9 each in Dickinson and Houghton counties, 3 each in Iron and Marquette counties, and one each in Huron and Keweenaw counties. As is true of all classes of returns, the full number of deaths that occurred from mining accidents was not enumerated. According to the annual reports of the Mining Inspector of Gogebic county, Mr. Clarence M. Boss, to whom the thanks of this Department are due for information promptly furnished, there were 44 deaths from accidents in the mines of Gogebic county during

1892. The occupations of the men killed were as follows: carpenter, 1; engineers, 2; laborers, 7; miners, 20; pumpmen, 2; trammers, 4; skip tender, 1; timbermen, 7. There were 11 deaths from fall of ore; 4 from accidents with powder or blasting; 10 men were killed September 29, 1892, by the caving of a room in the East Norrie mine. The remaining fatal accidents were mostly in connection with the "cages" or "skips," or caused by falling bodies or falls in the shafts. The following is the account of the most important accident, as stated in the report of Inspector Boss:

"At the East Norrie mine, at about 5 a. m., September 29, there occurred the most serious accident that has yet attended mining operations on the Gogebic range, and resulting in the loss of 10 lives. There were 10 men working in the first room east of No. 8 shaft. This room was a large one, and, on account of the great width of vein in this portion of the mine, was worked in two sections, one portion three sets wide and seven sets long, then a pillar of three sets, then the room opened to the hanging wall eight sets further. All the men but two were working in the first section of this room at the time of the accident. The shift boss in charge of this part of the mine was at the time in a room a short distance west of the shaft, and noticing the rush of air that accompanies a large fall of ground, went to investigate. On passing the shaft he noticed that the skip tender was not there, and going into the east drift found that it was caved full at the entrance to the room and the turn-table buried. He then called some men and set them at work to clean out the drift and then went on surface and notified the captain who returned to the place with him. It was found that the caved material was running into the drift about as fast as the men could remove it, and they could make no headway, and it was decided to start a drift into the solid pillar to reach the side of the room. This work was pushed with remarkable speed, but upon reaching the room it was found to be filled also. They continued to drift along the west side of the room, and, hearing sounds further in, redoubled their efforts, and at the north end of the first chamber came upon Abraham Thompson who was in a small opening in the debris and uninjured. This was at 9 a. m., Sept. 30, the wonderful performance of drifting 75 feet in solid iron ore in 22 hours being without a parallel in the annals of iron mining. Drifting on into the second chamber, this was found to be open and in good condition and it was hoped that some of the men might be found here, but the two men who were employed in this chamber, Thompson and his partner, had just left at the time of the accident. Thompson being the last to leave did not get under the full force of the cave. At this time hope was abandoned of finding any of the others alive, but work was prosecuted vigorously, of clearing out the room and for the recovery of the bodies. This was a blind search as it was not known in what portion of the room the men were when the cave occurred. An attempt was made to find the tram car. This was reached Saturday evening, October 1, and by it were found the bodies of the two trammers, John Hermanson and Matt Matson, also Samuel Densham, a miner, and Michael Downs, the missing skiptender who had evidently gone into the room from motives of curiosity. Continuing the search, Simon Vecilan, foreman of the timber gang, was found at 7 a. m., October 4, and on the 5th Herman Ericson and John Blumquist, timbermen, and Frank Densham, a miner, were taken out. The fourth miner, John Johnson, was found Friday evening, October 6. The room was nearly all cleared out before the body of the remaining timberman, John Sundquist, was found; this was accomplished at 11:30 p. m., October 15, nearly 18 days after the accident. From the positions in which the bodies were found it is evident that the cave occurred suddenly and without the slightest warning, the tools being still in their hands. As to the cause of the cave it is mere conjecture; the room to the east of this was caved a few days before by blowing out the timbers and all settled full down to the sixth level. The pillar between was a large one, and had no appearance of being disturbed or shaken, and the first room was considered by all to be entirely safe. It is said there was some blasting on the seventh level under the caved second room at about the time of the accident and it is possible that this may have caused the pillar to sway to the east and permit the back to drop suddenly. The inquests held in the several cases resulted in attributing the deaths to accidental causes."

Poison.—All cases of poisoning are included under accidental deaths in which the agent was not stated in the returns to have been administered with suicidal intent. Of the 37 deaths from this cause in 1892, 15 were children under 5 years of age. Of the children under 5 years, one each died from the following poisons: laudanum, iodine, morphine, prussic acid and rat poison (arsenic). Five adults died from morphine poisoning, one each from arsenic, carbolic acid and lead, the latter probably chronic lead poisoning, and five from the effects of chloroform, in two cases of which the chloroform was stated to have been administered by dentists. In all the other cases, 19, employed was not stated.

Railroad Accidents.—According to the registration returns there were only 74 deaths from injuries received on railroads in Michigan in 1892. This number is much less than that reported to Hon. S. R. Billings, Commissioner of Railroads, for the year, and published in his 21st Annual Report. Of the greater accuracy of the Commissioner's figures there can be no question, and in addition to the larger number reported (167), as compared with the registration returns, many valuable particulars are given in regard to the manner in which the injuries were received, connection of the persons injured with the roads as employés or passengers, etc., and degree of negligence or carelessness concerned. The following statements are made upon the authority of the Railroad Commissioner's Report:

Deaths and injuries on railroads in Michigan, 1891 and 1892.

Manner of accident.	Killed, 1892.				Injured, 1892.				1891.	
	Passengers.	Employés.	Others.	Total.	Passengers.	Employés.	Others.	Total.	Killed.	Injured.
Collisions	.....	2	.....	2	6	8	1	15	12	34
Coupling cars	.....	17	.....	17	.....	223	.....	223	8	165
Derailment	.....	.....	.....	.....	20	4	.....	24	1	12
Falling from trains	1	23	1	25	2	31	1	34	14	40
Frogs	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
Getting on and off trains	4	4	2	10	12	27	6	45	14	37
At highway crossings	.....	.....	8	8	.....	.....	23	23	26	18
Miscellaneous causes	1	27	2	30	5	169	7	181	19	129
Overhead obstructions	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
Trespassers on trains	.....	.....	9	9	.....	.....	25	25	12	36
Trespassers on track	.....	.....	66	66	.....	1	48	49	69	37
Total	6	73	88	167	45	463	111	619	175	514

"The total number of accidents reported by all roads for 1892 is 786, an increase of 96 over the preceding year. The number of fatal accidents reported is 167, a decrease of 8 from 1891. Of the above, 207 are reported as having been clearly accidental, the remaining 579 resulting from negligence, lack of caution and the persistent habit of trespassing upon tracks and trains—147 trespassers or tramps, 7 intoxicated people and 5 suicides were killed or injured. The following comparative statement shows the number of passengers carried, number of passengers, employés and others killed and injured for 11 years, 1883-93." (To this table have been added in the State Department the additional columns showing the total numbers killed and injured in each year, and the rates per 1,000,000 passengers carried.)

The death-rate per 1,000,000 passengers carried for all classes of decedents (passengers, employés and trespassers and persons not connected with the railroads in any capacity included) is less in the year 1892 than for any year since 1884, which exhibits the same ratio, 4.1 per 1,000,000. The actual death-rate of passengers to total passengers carried was only about one-half as great, however, in 1892 as in 1884. A very remarkable reduction will be seen in the accident and injury rates for 1893, although the exact amount cannot be stated at present, the figures for the immense passenger traffic of the World's Fair year being not yet available.

Passengers carried, deaths and injuries on railroads in Michigan, 1883-93.

Year.	Number of passengers carried.	Number of passengers.		Number of employés.		Number of others.		Total number.		Rate per 1,000,000 passengers carried.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1883	25,312,275	15	54	62	289	86	73	163	416	6.4	16.4
1884	24,782,322	5	31	29	294	68	66	102	393	4.1	15.9
1885	22,970,564	7	39	45	229	71	58	123	316	5.4	13.8
1886	24,697,065	2	38	47	194	77	79	126	311	5.1	12.6
1887	24,057,719	2	32	62	251	78	87	142	370	5.9	15.4
1888	27,496,106	7	21	63	256	90	88	160	365	5.8	13.3
1889	31,136,050	8	26	60	282	110	86	178	394	5.7	12.7
1890	33,503,059	7	53	75	491	150	93	232	637	6.9	19 0
1891	34,206,271	5	47	52	355	118	112	175	514	5.6	15.0
1892	40,355,149	6	45	73	463	88	111	167	619	4.1	15.3
1893	*	47	76	53	110	72	52	172	238	.....	.....

* The number of passengers carried for the year 1893, on account of the World's Fair, largely exceeded that of any previous year. The exact figures are not yet obtainable. The total number of accidents reported from January 1, 1893, up to the first of December, 1893, is much less than for any year shown, but the number of passengers killed very much exceeds that of any other year, which is accounted for by the accidents that occurred at Jackson on the Michigan Central and at Battle Creek on the Chicago & Grand Trunk railroads.

Classes of railroad employés in Michigan, number of each class killed and injured, and death and injury rates per 1,000 employés of each class, 1892.

Classes.	Number of employés.	Killed.	Injured.	Total.	Rate per 1,000.		
					Killed.	Injured.	Total.
Baggagemen	342	.....	31	31	.....	90.7	90.7
Brakemen	1,844	28	151	179	15.2	81.9	97.1
Conductors	942	2	21	23	2.1	22.3	24.4
Engineers	1,419	1	17	18	.7	12.0	12.7
Firemen	1,455	7	19	26	4.8	13.1	17.9
Laborers	8,579	15	60	75	1.7	7.0	8.7
Shopmen	3,960	1	18	19	.3	4.5	4.8
Yardmen	1,514	10	109	119	6.6	72.0	78.6
Others	7,764	9	37	46	1.2	4.7	5.9
Total	27,819	73	463	536	2.6	16.7	19.3

On page xv of the Railroad Commissioner's report for 1893 is presented a classified statement of the total number of employés of Michigan roads both within and without the State, amounting to 82,931. Of this number, 27,819, or 33.5 per cent are employed in Michigan. Assuming that the men are distributed by occupations in Michigan in the same manner as stated for the total number of employés, and comparing the number of men killed and injured in each class in Michigan during 1892, we obtain some

important rates bearing upon the comparative hazardness of different branches of railroad service. It should be observed that the numbers are quite small, being only for one year, and a longer period of observation is demanded before accepting the statements as conclusive.

According to these figures the risk of fatal injury is over twice as great for brakemen as for any other class of railroad employés, 15.2 being killed, on the average, out of every 1,000 employed per annum. The next in order in point of danger is that of the yardmen (chiefly switchmen) with a rate of 6.6 killed per annum per 1,000 employed. The accident death-rate of firemen was 4.8 per 1,000. Other classes of employés are much lower in the scale. Both the injury and mortality rates for engineers are lower than for any other class actively engaged in road service. It must be remembered that the experience of a single year may not be fairly representative in all respects. The number of baggagemen injured in 1892 appears to have been unusually high as compared with the preceding year (31 and 3); this may arise from the inclusion of minor injuries in the latter year.

Injuries from Horses and Vehicles.—Horses were reported to have caused 17 deaths directly, besides 9 that occurred from runaways, 6 by being run over and 8 by falls or injuries about wagons. Street cars caused 4 deaths, all males and under 20 with one exception. Cable cars and electric cars are not specified in the returns of this year. One death was caused by a bicycle, a male between 65 and 70 years of age.

Miscellaneous Casualties.—Miscellaneous casualties numbered 481, the principal varieties of which are stated in Table 82. Of the 27 deaths from *asphyxia*, 6 were due to choking, 5 were smothered, 8 strangled, 4 suffocated, and 1 from illuminating gas; 3 were reported as such. One infant was reported to have been injured by the use of forceps at birth; in 9 cases of injury at birth the cause of the injury was not stated. Five deaths were reported from cattle, and 3 from injuries by dogs (not stated as hydrophobia). Electricity caused 2 deaths, both adult males. Explosions caused 15 deaths, of which 14 were definitely stated to be from explosion of steam boilers. Ten deaths resulted from falling from height, 27 from fall unspecified as to character, 1 from fall of building, and 19, all males, from falling trees. Fractures caused 42 deaths in 1892, 30 males and 12 females, as follows: arm, 1; hip, 5; leg, 8; neck, 2; pelvis, 1; skull, 18; spine, 6; thigh, 1. Four deaths, 3 males and 1 female, all adults, resulted from freezing. To this number should perhaps be added a few reported as due to "cold" (see Table 90), it being uncertain whether disease or freezing is to be understood by this term. Deaths from machinery numbered 18, with 1 exception, males, as follows: elevator, 1; engine-room, 1; machinery, 1; mill, 4; paper mill, 1; planing mill, 1; saw mill, 8; shop, 1. Deaths in the course of what may be termed outdoor occupations were 21: "clay bank fell on him," 1; stump machine, 1; fall of log, 4; caving-in of land, 1; "crushed by stone while burying it," 1; "load of logs turning over," 2; "killed by falling of straw-stack on him," 1; under water-tank, 1; in well, 1; fall of barrel of ashes, 1; falling board, 1; "killed in woods," 3; "crushed under case of heavy glass," 1; axe, 1; injury on boat, 1. Impure milk was stated to have caused the death of 1 infant. Surgical operation should not be stated as a cause of death as a rule, the disease or injury that occasioned the operation being the true cause of death. In 1892, 18 deaths were so reported: 1 after amputation of arm, 2 after amputation of leg, and 2 after ovariotomy; 13 were entirely unspecified. Scalding caused 25 deaths, 15 males and 10 females; 19 of these were children under 5 years of age. There were 229 deaths from accidental injuries returned in which either the means of death or the nature of the injury that

caused death was not definitely specified. These were as follows: killed by accident, 181; injury, 4; internal injury, 4; injury of spine, 6; injury of head, 2; shock after injury, 4; concussion of brain, 11; concussion of heart, 1; contusion of spine, 2; head crushed, leg cut and bled to death, tumor from bruise, wound in leg, paralysis from accident, strain, scalp wound, found dead in woods, sliver in side, inflammation of brain from accident while intoxicated, drank too much water, killed on boat, stung by bee, crushed,—each, 1.

II.—SUICIDAL DEATHS, 1892.

There were 107 suicidal deaths in Michigan during the year 1892 according to the registration returns. In some cases compiled as accidental deaths the motives of decedents may have been suicidal, but it is obviously impossible to treat such cases other than as they appear on the face of the returns. The number of deaths from suicide in 1892 is only exceeded, and that very slightly, by the number reported for one previous year of registration, 1890. Both of these years are higher in the list than the intervening year, 1891, for which only 79 deaths were so reported.

The facts of chief importance in regard to deaths of suicides in Michigan for the year 1892, together with the aggregate for nineteen years of registration, 1874-92, are stated in Tables 84 and 85. In the latter table, relating to nativity, occupation and means of death of suicides, the numbers registered for the present year are given in parentheses after each statement, thus making comparison easy with the total number for the period of nineteen years preceding. In Table 90 the number of suicides of each sex are given for each month and period of age.

Although suicides, like all other deaths, are imperfectly registered in Michigan, comparison of the figures returned for successive periods of years, in which the same percentage of deficiency may be presumed to obtain, shows that the death-rate from this cause is increasing. It was 3.3 per 100,000 population for the five-year period, 1871-75 (see Table 77); 4.0, 4.6 and 4.9 for the following periods in order. Of course these rates are much below the truth, but the fact of increase seems to be clearly indicated. As indicative of the increased tendency to suicide in American life, the following conclusions of Dr. Davis R. Dewey, derived from a careful study of the statistics of the New England States, may be quoted:*

"It is clearly seen that the suicidal tendency has been steadily increasing in the last twenty years in Massachusetts and Connecticut; that in Vermont there has been a general advance, not however so regular, while in Rhode Island no marked tendency in any one direction has been discerned. Taking New England as a whole, it seems probable from the data presented that suicides have increased from thirty to sixty per cent since 1860. In Connecticut the advance in the rate has been very marked in the past ten years, disclosing an amount which it is difficult to parallel in English-speaking countries."

III.—HOMICIDES, 1892.

The more general term homicide is employed instead of the word murder, usually found in the returns, because it is evident that in our loose and inaccurate records, where even the manner of death is not generally specified, any point that requires discrimination, as the legal status of a homicide, cannot be depended upon. Many deaths fail to be registered in Michigan from each cause, and it is probable that the number returned as homicides would be increased if all that occurred were properly recorded. A list from the newspaper reports day by day through the year would very likely show a larger number than are officially returned. Taking our imperfect returns as a basis, it would seem, as shown in Table 77, that there has been an increase in the proportion of violent deaths of this class in recent years.

* Publications American Statistical Association, 1892; III, 158.

Table 84.—*Months of death, sex and civil condition of persons reported as suicides in Michigan for each of the nineteen years, 1874–92, inclusive.*

Years.	Number.	Months of death.												Sex.			Condition.			
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Unk.	Total.	Males.	Females.	Married.	Single.	Widow.	Unk.
Total, 1874-92	1,493	84	65	98	139	141	140	139	138	120	132	142	148	7	1,493	1,135	357	912	387	131	63
1874	53	7	3	4	1	4	5	5	4	3	5	6	6	.....	53	31	22	28	17	4	4
1875	52	3	4	3	4	8	4	4	4	5	3	6	4	.....	52	42	10	34	10	3	5
1876	54	3	1	3	7	7	8	2	4	5	6	5	3	.....	54	43	11	35	12	3	4
1877	66	2	5	7	4	7	5	6	7	4	2	7	10	.....	66	46	20	38	23	2	3
1878	63	5	2	5	5	5	9	5	7	5	6	5	4	.....	a 63	40	23	41	16	4	2
1879	59	3	2	4	7	3	8	5	7	5	4	4	7	.....	59	46	13	35	19	3	2
1880	65	4	3	6	8	9	6	3	4	7	2	6	6	1	65	50	15	38	20	4	3
1881	57	1	5	3	3	4	4	7	9	7	4	6	4	.....	57	42	15	34	11	9	3
1882	62	2	3	4	6	8	7	2	7	5	7	4	6	1	62	44	18	32	24	3	3
1883	91	5	1	7	9	5	8	11	9	4	6	16	10	.....	91	69	22	53	23	12	3
1884	101	4	5	7	8	6	16	8	8	14	10	10	8	.....	101	84	20	71	28	4	1
1885	91	4	4	3	7	7	9	9	11	4	14	10	8	1	b 91	78	12	55	19	13	4
1886	82	7	2	4	6	13	5	4	11	9	7	5	9	.....	82	64	18	46	20	11	5
1887	105	3	4	10	12	11	5	10	12	10	13	6	9	.....	105	75	30	63	28	10	4
1888	101	6	4	3	10	13	11	9	7	9	11	8	8	2	101	82	19	54	31	12	4
1889	94	7	3	3	7	7	8	7	11	4	8	11	17	1	94	78	16	59	19	14	2
1890	108	7	8	7	11	11	7	17	7	7	8	9	9	.....	108	90	18	70	25	7	6
1891	79	8	1	7	9	4	6	8	3	5	10	9	8	1	79	49	30	55	16	6	2
1892	107	3	5	8	15	9	9	17	6	8	6	9	12	.....	107	82	25	71	26	7	3

a 1 mulatto. b 1 sex unknown.

Table 85 (A).—*Occupations of persons reported as suicides in 1892, with aggregate for nineteen years, 1874–92, inclusive. (The numbers for the year 1892 are in parentheses.)*

Occupations.	No.	Occupations.	No.	Occupations.	No.
Agents	11	Farm-workers (1)	1	Physicians (1)	8
Architects	1	Firemen (1)	1	Photographers	1
Bakers	2	Furniture packers (1)	1	Policemen	1
Bankers	3	Gardeners	2	Printers	4
Barbers (2)	5	Grain dealers	1	Prostitutes	9
Beer peddler (1)	1	Harness makers (1)	3	Real estate dealers (1)	1
Blacksmiths (1)	8	Hatters	1	Sailors	5
Book agents	1	Hostlers	1	Salesmen (1)	6
Bookkeepers (1)	14	Hotel keepers (2)	8	Saloonkeepers	23
Brewers	5	Housekeepers (8)	120	School girls (1)	1
Brickmakers	3	Housewives	37	Seamstresses	1
Brick masons	1	Housework (1)	5	Servants (2)	31
Business men	4	Insurance agents (1)	4	Ship carpenters	1
Butchers	9	Laborers (9)	203	Shoemakers (1)	15
Cabinet makers	3	Lawyers	6	Soldiers (1)	4
Carriage trimmers	1	Lumbermen (1)	5	Stavemakers	1
Carpenters (1)	33	Machinists	5	Stovemounters	1
Cigar makers (1)	6	Mail clerk (1)	1	Students	5
Clerks (3)	35	Manicure	1	Tailors	8
Conductors	1	Masons	10	Tanners	3
Contractors (1)	2	Mechanics	14	Teachers	5
Cooks (1)	1	Merchants (1)	24	Teamsters (1)	7
Coopers	7	Millers	3	Tinners	2
Cutters	1	Milliners (1)	2	Tobacco dealers (1)	1
Dentists	1	Miners	5	Trunk makers (1)	1
Domestics	9	Ministers	1	Unemployed (7)	54
Draymen	5	Mill owners	1	Unspecified (14)	159
Druggists	5	Miscellaneous	11	Upholsterers	1
Engineers	5	Musicians	4	Waiters	1
Farmers (31)	444	Painters (2)	10	Weavers	3
Farmers' wives (1)	7	Peddlers	5		
Total number for 1892, 107; for nineteen years, 1874–92					1,493

Table 85 (B).—*Nativity of persons who were reported as suicides in the year 1892, and total for the nineteen years, 1874-92, inclusive. (The numbers for they ear 1892 are in parentheses.)*

Nativity.	No.	Nativity.	No.	Nativity.	No.
Austria (1)	3	Italy	1	Poland	3
Bohemia	1	Kentucky	1	Prussia	11
Canada (4)	92	Maine	3	Rhode Island	1
Colorado	1	Massachusetts (1)	8	Russia (1)	2
Connecticut	6	Michigan (32)	264	Scotland (1)	17
Delaware	1	Minnesota	1	Sweden (3)	15
Denmark	3	New Hampshire	4	Switzerland	3
England (4)	72	New Jersey	8	Texas	1
Europe (2)	2	New York (18)	255	United States	2
France	6	North Carolina	1	Unknown (10)	112
Germany (17)	272	Norway	1	Vermont (1)	16
Holland (1)	21	Nova Scotia	2	Virginia	2
Illinois (1)	6	Ohio (3)	73	Wisconsin (1)	11
Indiana (1)	12	Pennsylvania (2)	33	Zealand	2
Ireland (3)	42				
Total number for 1892, 107; for nineteen years, 1874-92					1,493

Table 85 (C).—*Means of death employed by suicides in 1892, and in the nineteen years, 1874-92, inclusive. (The numbers for the year 1892 are in parentheses.)*

Means used.	No.	Means used.	No.	Means used.	No.
Burning	1	Jumping from window (1)	1	Starving	1
Cutting throat	27	Poison (12)	206	Strangulation	2
Drowning (7)	78	Run over by cars	2	Unspecified (70)	838
Dynamite	1	Severing artery	3	Wounds	8
Hanging (9)	196	Shooting (8)	129		
Total number for 1892, 107; for nineteen years, 1874-92					1,493

OLD CLASSIFIED AND ALPHABETICAL TABLES OF CAUSES OF DEATH.

For reasons stated on preceding pages of this report, the older classification of Dr. Farr, which was employed in these reports for the systematic statement of causes of deaths by counties, has been abandoned in favor of a simpler arrangement (see Table 70). Tables 86 to 89, following, summarize the principal results of registration for 1892, arranged according to the old classification, and may be compared with the corresponding tables given in previous reports. In Table 89 the deaths returned and death-rates per 100,000 population for each disease, order and class of the old "Nosological Arrangement" are given for 1892, 1891 and for the previous years of registration from 1871 to 1890 by means of quinquennial averages. This table is based upon Table 75 of the registration report for 1891, and while that table correctly represents the *final results* of compilation as stated in each year under the old system, there are certain discrepancies between it and a table based upon the "Alphabetical Lists," as is Table 71 in the present report. The latter is believed to be more satisfactory and generally reliable in cases of difference.

Table 86.—*Number of deaths returned from all causes, from each class of causes, and the per cent of deaths from each class, to deaths from all causes, for the years 1890-92; average for ten years, 1882-91.*

Causes of death—Classes.	1890.		1891.		1892.		Average for 10 years, 1882-91.	
	Number.	Per cent of total.	Number.	Per cent of total.	Number.	Per cent of total.	Number.	Per cent of total.
All causes	21,642	100.0	22,079	100.0	21,729	100.0	19,150	100.0
I.—Zymotic diseases	5,627	26 0	5,9.9	26.9	5,369	24.7	4,825	25.2
II.—Constitutional diseases	3,406	15.7	3,390	15.4	3,408	15.7	3,090	16.1
III.—Local diseases	6,757	31.2	7,016	31.8	6,971	32.1	5,901	30.8
IV.—Developmental diseases	3,149	14.5	2,876	13.0	2,770	12.7	2,993	15.6
V.—Violent deaths	1,075	5.0	993	4.5	1,144	5.3	969	5.1
Unknown and unclassified	1,628	7.5	1,875	8.5	2,067	9.5	1,374	7.2

Table 87.—*By months, the number of deaths returned in Michigan from all causes and from each class of causes during the year 1892.*

Causes of death—Classes.	Year 1892.	Months of death, 1892.												
		Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Unk.
All causes	21,729	2,152	1,687	1,734	1,879	1,700	1,481	1,678	1,942	1,802	1,892	1,788	1,949	45
I.—Zymotic diseases	5,369	608	447	382	405	353	294	417	579	530	500	426	418	9
II.—Constitutional diseases	3,408	259	243	262	295	317	305	267	306	270	308	275	302	4
III.—Local diseases	6,971	803	589	594	662	577	437	480	505	515	575	563	665	6
IV.—Developmental diseases	2,770	245	215	225	259	209	199	225	236	209	235	233	274	6
V.—Violent deaths	1,144	67	47	87	98	86	101	138	109	88	105	114	101	3
Unknown and unclassified	2,067	170	146	184	160	158	145	151	207	190	174	177	188	17

Table 90 is the old "Alphabetical List" of diseases (with some minor modifications), and its facts with reference to sex of decedents from specified causes as distributed by months of death and period of age are supplementary to one of the principal tables of this report (Table 69). Certain minor causes of death may also be found in the list that are not included in the more condensed form of Table 69. The great difficulty in reference to this table is that cognate causes of death may be widely separated by the arbitrary alphabetical arrangement, and that in consequence a person consulting this table for the total number of deaths from any cause or group of causes may not obtain the correct number except at the expense of very tedious examination. This was especially true of deaths from accidents and violence previous to the present report; as seen on page 236, such deaths are grouped together so that a correct idea of the total number can be obtained. The lack of identity in the diseases included under the same terms in Tables 86-89 and Table 90 has been already alluded to (see page 103), and both of these old arrangements differ from the uniform statistical arrangement adopted in the body of this report (Tables 69 to 71). It should be mentioned that the sub-titles included in the terms of Tables 69 to 71, and mentioned in the discussion beginning on page 188, always refer to Table 90, and that Table 71, showing the results of registration for previous years, was based upon the corresponding tables as printed in the reports for 1873, 1879, 1885 and 1891.

Table 88.—*Exhibiting by geographical divisions, the number of deaths, the per cent of deaths in 1892 to estimated population in 1892, the per cent of deaths for each division to total deaths for the State, and the per cent of deaths from each class of causes to deaths from all causes.*

State and geographical divisions.	Estimated population in 1892.	Deaths reported, 1892.		Rate per 1,000 of deaths to estimated population, 1892.	Per cent of deaths from each class of causes to deaths from all causes by geographical divisions.					
		Number.	Per cent of total.		Class I.—Zymotic diseases.	Class II.—Constitutional diseases.	Class III.—Local diseases.	Class IV.—Developmental disease.	Class V.—Violent deaths.	Unknown and unclassified.
State	2,185,279	21,729	100.0	9.9	24.7	15.7	32.1	12.7	5.3	9.5
Upper Peninsular	199,774	2,487	11.4	12.4	27.8	9.2	21.6	11.3	9.1	20.9
Northwestern	67,726	538	2.5	7.9	16.7	15.2	33.8	12.8	5.6	15.8
Northern	57,965	440	2.0	7.6	25.2	13.4	31.1	10.9	7.5	11.8
Northeastern	54,997	444	2.0	8.1	23.6	8.3	26.4	12.2	5.6	23.9
Western	258,699	2,503	11.5	9.7	26.0	16.6	31.1	14.9	4.2	7.2
North-central	88,711	550	2.5	6.2	22.5	15.6	31.6	10.5	8.4	11.3
Eastern	334,058	3,235	14.9	9.7	26.2	15.1	29.2	14.4	5.7	9 5
Central	307,318	2,530	11.6	8.2	19.4	17.5	38.8	12.0	5.1	7.2
Southwestern	132,604	1,131	5.2	8.5	23.9	17.0	33.8	15.0	4.7	5.7
South-central	303,064	3,073	14.1	10.1	18.8	20.1	40.7	12.3	3.2	4.9
Southeastern	330,363	4,793	22.1	12.6	29.6	15.8	32.3	11.9	4.5	6.0

Table 89.—*Deaths in Michigan from classified causes during the year 1892, compared with the year 1891, and with averages for the five-year periods, 1871-75, 1876-80, 1881-85, 1886-90; also death-rates per 100,000 estimated population.*

Causes of death.	Year 1892.	Year 1891.	Average, 5 years, 1886-90.	Average, 5 years, 1881-85.	Average, 5 years, 1876-80.	Average, 5 years, 1871-75.	Rates per 100,000 population.					
							1892.	1891.	1886-90.	1881-85.	1876-80.	1871-75.
All causes	21,729	22,079	20,279	17,454	13,754	12,369	994.3	1031.9	1012.5	983.8	889.5	987.1
Specified causes	19,814	20,311	19,025	16,155	12,398	10,986	906.7	949.3	949.9	910.6	801.8	882.4
Causes not specified	1,915	1,768	1,254	1,299	1,356	1,381	87.6	82.6	62.6	73.2	87.7	104.7
CLASSES.												
I.—Zymotic	5,369	5,929	4,981	4,841	3,707	3,425	245.7	277.1	248.8	272.9	239.7	259.4
II.—Constitutional	3,408	3,390	3,221	2,827	2,396	2,102	156.0	158.4	160.8	159.4	154.9	159.2
III.—Loca	6,971	7,016	6,356	5,045	3,809	3,642	319.0	327.9	317.3	284.4	246.3	276.0
IV.—Developmental	2,770	2,876	3,348	2,467	1,695	1,167	126.8	134.4	167.0	139.0	109.6	88.4
V.—Violence	1,144	993	1,087	898	733	613	52.4	46.4	51.8	50.6	47.4	46.4
Unclassified	152	107	82	77	59	39	7.0	5.0	4.1	4.4	3.8	3.0
ORDERS.												
I.—1. Miasmatic	5,298	5,855	4,939	4,799	3,665	3,378	242.4	273.6	246.6	270.5	237.0	255.5
2. Enthetic	19	9	10	13	11	8	.9	.4	.5	.7	.7	.6
3. Dietic	35	51	22	19	18	27	1.6	2.4	1.1	1.1	1.2	2.0
4. Parasitic	17	14	10	11	13	17	.8	.7	.5	.6	.8	1.3
II.—1. Diathetic	1,127	1,155	895	707	622	601	51.6	53.9	44.7	39.9	40.2	45.5
2. Tubercular	2,281	2,235	2,326	2,120	1,774	1,502	104.4	104.5	116.1	119.5	114.7	113.8
III.—1. Nervous	2,271	2,334	2,163	1,859	1,442	1,505	103.9	109.1	107.9	104.8	93.2	114.0
2. Circulatory	1,347	1,351	1,042	732	478	372	61.6	63.1	52.0	41.3	30.9	28.3
3. Respiratory	1,753	1,695	1,592	1,214	1,000	1,013	80.2	79.2	79.5	68.4	64.7	76.7
4. Digestive	923	1,027	945	771	595	546	42.2	48.0	47.2	43.5	38.4	41.4
5. Urinary	561	516	443	336	186	129	25.7	24.1	22.1	18.9	12.1	9.8
6. Generative	21	22	20	22	20	17	1.0	1.0	1.1	1.3	1.3	1.3
7. Locomotor	13	14	11	12	11	5	.6	.7	.5	.7	7.	.4
8. Integumentary	82	57	139	98	75	54	3.8	2.7	6.9	5.5	4.9	4.1
IV.—1. Children*	1,219	1,284	1,833	1,231	861	545	55.8	60.0	91.5	69.4	55.7	41.3
2. Women*	249	263	242	233	192	222	11.4	12.3	12.1	13.1	12.4	16.8
3. Old people*	1,079	1,014	980	733	557	400	49.4	47.4	48.9	41.3	36.0	30.3
4. Nutrition	223	315	293	269	85	.....	10.2	14.7	14.6	15.2	5.5	.....
V.—1. Accident	1,020	899	915	797	659	557	46.7	42.0	45.7	44.9	42.6	42.2
2. Homicide	17	15	24	20	12	13	.8	.7	1.2	1.1	.8	.9
3. Suicide	107	79	98	81	62	44	4.9	3.7	4.9	4.6	4.0	3.3

* I. e., developmental diseases of children, women and old people.

Table 89.—CONTINUED.—*Deaths and death-rates, five-year periods.*

Causes of death.	Year 1892.	Year 1891.	Average, 5 years, 1886-90.	Average, 5 years, 1881-85.	Average, 5 years, 1876-80.	Average, 5 years, 1871-75.	Rates per 100,000 population. 1892.	1891.	1886-90.	1881-85.	1876-80.	1871-75.
CLASS I.—ZYMOTIC	5,369	5,929	4,981	4,841	3,707	3,425	245.7	277.1	248.8	272.9	239.7	259.4
I.—*Order 1. Miasmatic*	5,298	5,855	4,939	4,799	3,665	3,373	242.4	273.6	246.6	270.5	237.0	255.5
1. Small-pox	1	1	3	39	39	102	.0	.0	.1	2.2	2.5	7.7
1. Chicken-pox	4	4	2	2	1	2	.2	.2	.1	.1	.1	.2
2. Measles	72	225	232	169	98	138	3.3	10.5	11.6	9.5	6.3	10.5
3. Scarlet fever	442	400	284	444	404	541	20.2	18.7	14.2	25.1	26.1	41.0
4. Diphtheria	1,020	1,060	977	1,321	961	192	46.7	49.5	48.8	74.5	62.2	14.5
5. Quinsy	24	25	14	16	9	9	1.1	1.2	.7	.9	.6	.7
6. Croup *	291	288	429	345	236	159	13.3	13.4	21.4	19.4	15.3	12.1
7. Whooping-cough	147	158	137	124	174	144	6.7	7.4	6.8	7.0	11.3	10.9
8. Typhoid fever	626	684	603	541	428	543	28.6	31.9	30.1	30.5	27.7	41.1
8. Typhus fever	6	7	6	9	17	21	.3	.3	.3	.5	1.1	1.6
8. Typho-malarial fever	23	16	36	26	7	1	1.1	.7	1.8	1.5	.4	.0
9. Erysipelas	64	66	63	78	82	121	2.9	3.1	3.1	4.4	5.3	9.2
9. Septicæmia	167	172	149	92	8	3	7.6	8.0	7.4	5.2	.5	.2
10. Puerperal fever	42	35	32	39	30	41	1.9	1.6	1.6	2.2	1.9	3.1
11. Carbuncle	3	4	3	4	2	1	.1	.2	.1	.2	.1	.0
12. Influenza	907	1,076	258	8	7	8	41.5	50.3	12.9	.5	.5	.6
13. Dysentery	74	89	156	149	173	283	3.4	4.1	7.8	8.4	11.2	21.4
14. Diarrhea	275	292	388	339	263	343	12.6	13.7	19.4	19.1	17.0	26.0
15. Cholera infantum	608	799	672	578	349	279	27.8	37.3	33.6	32.6	22.6	21.1
16. Cholera morbus	43	45	47	44	29	24	1.9	2.1	2.3	2.5	1.9	1.8
16. Cholera	34	31	5	7	13	9	1.6	1.5	.2	.4	.8	.7
17. Ague	141	132	174	179	124	158	6.5	6.2	8.7	10.1	8.0	12.0
18. Remittent fever	133	105	123	127	141	183	6.1	4.9	6.1	7.2	9.1	13.9
19. Rheumatism	149	141	147	117	73	71	6.8	6.6	7.3	6.6	4.7	5.4
20. Measles, German	2	.....	.....	.....	.....	.....	.1	.....	.....	.....	.....	.....
I.—*Order 2. Enthetic*	19	9	10	13	11	8	.9	.4	.5	.7	.7	.6
1. Syphilis	11	6	8	10	9	6	.5	.3	.4	.6	.6	.5
2. Stricture	7	1	2	2	1	2	.3	.0	.1	.1	.0	.1
3. Hydrophobia	.....	2	1	1	.....	.....	.....	.1	.0	.0	.....	.....
4. Glanders	1	.....	.....	.....	.....	.....	.0	.....	.....	.....	.....	.....
I.—*Order 3. Dietic*	35	51	22	19	18	27	1.6	2.4	1.1	1.1	1.2	2.0
1. Privation	.....	20	.....	.....	.....	1	.....	.9	.....	.....	.....	.0
2. Purpura	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.0	.0
2. Rachitis	1	2	2	2	1	1	.0	.1	.1	.1	.0	.0
2. Scurvey	.....	2	.....	.....	1	1	.....	.1	.....	.....	.0	.0

* Includes membranous croup.

Table 89.—CONTINUED.—*Deaths and death-rates, five-year periods.*

Causes of death.	Year 1892.	Year 1891.	Average, 5 years, 1886-90.	Average, 5 years, 1881-85.	Average, 5 years, 1876-80.	Average, 5 years, 1871-75.	Rates per 100,000 population. 1892.	1891.	1886-90.	1881-85.	1876-80.	1871-75.
I.—*Order 3. Dietic.*—Con.												
3. Intemperance	34	27	19	17	15	24	1.6	1.3	.9	1.0	.9	1.8
4. Opium eating	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
I.—*Order 4. Parasitic*	17	14	10	11	13	17	.8	.7	.5	.6	.8	1.3
1. Thrush	9	8	4	6	5	9	.4	.4	.2	.3	.3	.7
2. Worms	8	5	6	5	8	8	.4	.2	.3	.3	.5	.6
3. Disease of scalp	.....	1	.....	.....	.....	.....	.....	.0	.....	.....	.....	.....
CLASS II.—CONSTITUTIONAL	3,408	3,390	3,221	2,829	2,396	2,102	156.0	158.0	160.8	159.4	154.9	159.2
II.—*Order 1. Diathetic*	1,127	1,155	895	707	622	601	51.6	54.0	44.7	39.8	40.2	45 5
1. Gout	.....	2	.....	1	.....	.....	.....	.1	.....	.0	.....	.....
2. Anæmia	8	8	5	3	63	138	.4	.4	.2	.2	4.1	10.5
2. Dropsy	389	397	378	310	249	247	17.8	18.6	18.9	17.5	16.1	16.7
3. Cancer	558	534	470	352	267	161	25.5	25.0	23.4	19.8	17.3	12.2
3. Tumor*	139	157	*103*	77	*54*	*36*	6.4	7.3	*5.1*	*4.3*	*3.5*	*2.7*
4. Noma (canker)	13	28	24	29	28	42	.6	1.3	1.2	1.6	1.8	3.2
5. Gangrene	20	29	18	13	13	13	.9	1.3	.9	.7	.8	.9
II.—*Order 2. Tubercular*	2,281	2,235	2,326	2,120	1,774	1,502	104.4	104.5	116.1	119.5	114.7	113.8
1. Scrofula	18	17	28	31	33	40	.8	.8	1.4	1.7	2.1	3.0
2. Consumption of bowels	37	23	26	29	21	18	1.7	1.1	1.3	1.6	1.4	1.4
3. Phthisis (consumption of lungs)	2,111	2,096	2,224	2,009	1,701	1,431	96.6	97.9	111.0	113.3	110.0	108.4
4. Hydrocephalus	6	9	9	9	7	8	.3	.4	.4	.5	.5	.6
5. Marasmus	109	90	40	41	12	5	5.0	4.2	2.0	2.3	.8	.4
CLASS III.—LOCAL	6,971	7,016	6,356	5,045	3,809	3,642	319.0	327.8	317.3	284.4	246.3	276.0
III.—*Order 1. Nervous*	2,271	2,334	2,163	1,859	1,442	1,505	103.9	109.1	107.9	105.8	93.2	114.0
1. Cephalitis	292	315	343	308	264	275	13.4	14.7	17.1	17.4	17.1	20.8
2. Apoplexy	220	213	146	106	102	76	10.1	10.0	7.3	5.9	6.6	5.8
3. Paralysis	587	596	539	365	261	165	26.9	27.9	26.9	20.6	16.9	12.5
4. Insanity	53	39	29	19	17	16	2.4	1.8	1.5	1.1	1.1	1.2
5. Chorea	8	3	2	5	2	3	.4	.1	.1	.3	.1	.2
6. Epilepsy	62	42	52	50	36	30	2.8	1.9	2.6	2.8	2.3	2 3
7. Tetanus	9	12	7	7	5	4	.4	.6	.3	.4	.3	.3
8. Convulsions	548	547	445	385	297	277	25.1	25.6	22.2	21.7	19.2	20.9
9. Brain diseases	164	203	380	335	252	208	7.5	9.5	19.0	18.9	16.3	15.8
9. Dropsy of brain	28	18	37	39	47	50	1.3	.8	1.8	2.2	3.0	3.8

* Ovarian tumors included under tumor.

Table 89.—CONTINUED.—*Deaths and death-rates, five-year periods.*

Causes of death.	Year 1892.	Year 1891.	Average, 5 years, 1886-90.	Average, 5 years, 1881-85.	Average, 5 years, 1876-80.	Average, 5 years, 1871-75.	Rates per 100,000 population. 1892.	1891.	1886-90.	1881-85.	1876-80.	1871-75.
III.—*Order 1. Nervous.*—Con.												
10. Spinal fever	32	45	71	104	65	141	1.5	2.1	3.5	5.9	4.2	10.7
11. Spotted fever	.....	.....	1	4	1	37	.....	.....	.0	.2	.0	2.8
12. Meningitis	46	60	21	21	12	8	2.1	2.8	1.5	1.2	.8	.6
13. Meningitis, Cerebro-spinal	7	12	7	20	9	58	.3	.6	.3	1.1	.6	4.4
14. Meningitis, Spinal	63	84	69	89	37	61	2.9	3.9	3.5	5.0	2.4	4.6
15. Neuralgia	8	.....	.....	.....	2	6	.4	.....	.....	.....	.1	.5
16. Spine disease	94	107	1	.....	31	90	4.3	5.0	.0	.....	2.0	6.8
17. Spine, Inflammation of	.....	.....	2	1	2	2	.....	.....	.1	.0	.1	.1
18. Disease of nerves	50	38	.....	.....	.....	.....	2.3	1.8	.....	.....	.....	.....
III.—*Order 2. Circulatory*	1,347	1,351	1,042	732	478	372	61.6	63.1	52.0	41.3	30.9	28.2
1. Pericarditis	97	70	82	78	69	63	4.4	3.3	4.1	4.4	4.5	4.8
2. Aneurism	1	4	18	12	2	3	.0	.2	.9	.7	.1	.2
3. Heart disease	881	902	942	641	409	307	40.3	42.2	47.0	36.1	26.4	23.8
3. "Heart failure"	368	375	.....	.....	.....	.....	16.8	17.5	.....	.....	.....	.....
III.—*Order 3. Respiratory*	1,753	1,695	1,591	1,214	1,000	1,013	80.2	79.2	79.4	68.4	64.7	76.7
1. Epistaxis	.....	.....	1	1	3	1	.....	.....	.0	.0	.2	.0
2. Laryngitis	9	8	4	4	5	2	.4	.4	.2	.2	.3	.1
3. Bronchitis	191	143	150	95	46	29	8.7	6.7	7.5	5.4	3.0	2.2
4. Pleurisy	30	24	30	22	26	30	1.4	1.1	1.5	1.2	1.7	2.3
5. Pneumonia	1,291	1,243	1,087	846	687	743	59.1	58.1	54.2	47.7	44.4	56.3
6. Asthma	65	77	65	52	31	21	3.0	3.6	3.3	2.9	2.0	1.6
7. Lung disease	158	183	237	183	192	185	7.2	8.5	11.8	10.3	12.4	14.0
8. Catarrh	9	17	19	10	10	2	.4	.8	.9	.6	.6	.1
III.—*Order 4. Digestive*	923	1,027	944	771	595	546	42.2	48.0	47.1	43.5	38.4	41.4
1. Gastritis	53	52	59	63	55	31	2.4	2.4	2.9	3.6	3.6	2.4
2. Enteritis	334	355	345	317	240	227	15.3	16.6	17.2	17.9	15.5	17.3
3. Peritonitis	89	116	52	21	11	12	4.1	5.4	2.6	1.1	.7	.9
4. Ascites	5	6	3	3	4	6	.2	.3	.1	.2	.3	.5
5. Ulceration of intestines	9	2	9	6	4	7	.4	.1	.4	.3	.3	.5
6. Hernia	35	36	35	25	18	18	1.6	1.7	1.8	1.4	1.2	1.4
7. Obstruction of bowels	26	21	10	9	7	6	1.2	.9	.5	.5	.4	.3
8. Fistula	1	.....	2	.....	1	.....	.0	.....	.1	.....	.0	.....
9. Stomach diseases	125	132	194	110	88	72	5.7	6.1	9.7	6.2	5.4	5.5
10. Pancreas disease	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Table 89.—CONTINUED.—*Deaths and death-rates, five-year periods.*

Causes of death.	Year 1892.	Year 1891.	Average, 5 years, 1886-90.	Average, 5 years, 1881-85.	Average, 5 years, 1876-80.	Average, 5 years, 1871-75.	Rates per 100,000 population. 1892.	1891.	1886-90.	1881-85.	1876-80.	1871-75.
III.—*Order 4. Digestive.*—Con.												
11. Hepatitis	7	.....	9	9	9	10	.3	.....	.4	.5	.6	.8
12. Biliary calculus	6	6	2	.....	.....	.....	.3	.3	.1	.....	.....	.....
12. Jaundice	18	40	27	33	21	18	.8	1.9	1.4	1.9	1.4	1.4
13. Liver disease	90	121	113	105	98	94	4.1	5.7	5.6	5.9	6.3	7.1
14. Spleen disease	5	4	4	3	4	4	.2	.2	.2	.2	.3	.3
15. Bowel diseases	90	105	74	62	39	34	4.1	4.9	3.7	3.5	2.5	2.6
16. Mouth disease	10	31	4	4	.....	2	.5	1.5	.2	.2	.....	.1
17. Throat disease	20	.....	.....	.....	.....	5	.9	.....	.....	.....	.....	.4
III.—*Order 5. Urinary*	561	516	443	336	186	129	25.7	24.1	22.1	18.9	12.1	9.8
1. Nephritis	12	14	21	14	13	14	.5	.7	1.0	.8	.8	1.1
2. Bright's disease of kidneys	319	257	215	158	41	12	14.6	12.0	10.7	8.9	2.7	.9
3. Diabetes	69	78	67	55	35	33	3.2	3.7	3.4	3.1	2.3	2.5
4. Calculus	11	12	12	15	24	23	.5	.5	.6	.8	1.6	1.7
5. Cystitis	39	20	17	13	11	9	1.8	.9	.8	.7	.7	.7
6. Kidney diseases	111	135	111	82	62	38	5.1	6.3	5.6	4.6	4.0	2.9
III.—*Order 6. Generative*	21	22	20	22	20	17	1.0	1.0	1.0	1.2	1.3	1.3
1. Ovarian disease	7	1	.....	....	1	1	.3	.0	.....	.....	.0	.0
1. Ovarian tumor	.....	.....	6	9	8	2	.....	.....	.3	.5	.5	.1
2. Diseases of uterus	14	18	15	13	11	13	.6	.8	.7	.7	.7	1.0
3. Hydrocele	.....	1	.....	.....	.....	.....	.....	.0	.....	.....	.....	.....
4. Breast disease	.....	2	.....	.....	.....	.....	.....	.1	.....	.....	.....	.....
III.—*Order 7. Locomotor*	13	14	11	12	11	5	.6	.7	.5	.7	.7	.4
1. Arthritis	.....	.....	2	2	1	1	.....	.....	.1	.1	.0	.0
2. Joint diseases	13	14	9	10	11	5	.6	.7	.4	.5	.7	.4
III.—*Order 8. Integumentary*	82	57	140	100	75	54	3.8	2.6	7.0	5.6	4.9	4.1
1. Phlegmon	73	48	50	35	31	23	3.3	2.2	2.5	1.9	2.0	1.7
2. Ulcer	.....	4	10	7	7	3	.....	.2	.5	.4	.4	.2
3. Skin diseases	9	5	80	57	38	27	.4	.2	4.0	3.2	2.5	2.1
CLASS IV.—DEVELOPMENTAL	2,770	2,876	3,348	2,467	1,695	1,167	126.8	134.4	167.0	139.0	109.6	88.4
IV.—*Order 1. Children*	1,219	1,284	1,833	1,231	861	545	55.8	60.0	91.5	69.4	55.7	41.3
1. Still-born	1,014	1,090	1,153	859	730	368	46.4	50.9	57.6	48.4	47.2	27.9
2. Infantile	51	18	528	242	28	64	2.3	.8	26.4	13.6	1.8	4.8
2. Premature birth	78	97	55	50	34	17	3.6	4.5	2.7	2.8	2.2	1.3

Table 89.—CONCLUDED.—*Deaths and death-rates, five-year periods.*

Causes of death.	Year 1892.	Year 1891.	Average, 5 years, 1886-90.	Average, 5 years, 1881-85.	Average, 5 years, 1876-80.	Average, 5 years, 1871-75.	Rates per 100,000 population. 1892.	1891.	1886-90.	1881-85.	1876-80.	1871 75.
IV.—*Order 1. Children.*—Con.												
3. Cyanosis	1	2	2	1	3	.....	.0	.1	.1	.0	.2	.....
4. Spina bifida	.....	1	2	1	.....	1	.....	.0	.1	.0	.....	.0
5. Other malformations	6	7	8	9	6	6	.3	.3	.4	.5	.4	.5
6. Teething	69	55	79	66	58	90	3.2	2.6	4.0	3.7	3.8	6.8
7. Injury at birth *	.....	14	5	2	1	.....	.....	.7	.2	.1	.0	.....
IV.—*Order 2. Women*	249	263	242	233	192	222	11.4	12.3	12.1	13.1	12.4	16.8
1. Dysmenorrhea	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.0	.0
1. Turn of life	5	6	7	6	5	3	.2	.3	.3	.3	.3	.2
2. Child-birth	232	245	226	216	176	207	10.6	11.5	11.3	12.2	11.4	15.7
2. Abortion	12	10	8	10	8	7	.5	.5	.4	.6	.5	.5
2. Uterine hemorrhage	.....	2	1	1	3	3	.....	.1	.0	.0	.2	.2
IV.—*Order 3. Old people*	1,079	1,014	980	733	557	400	49.4	47.4	48.9	41.3	36.0	30.*
1. Old age	1,079	1,014	980	733	557	400	49.4	47.4	48.9	41.3	36.0	30.3
IV.—*Order 4. Nutrition*	223	315	293	269	85	.....	10.2	14.7	14.6	15.2	5.5	.....
1. Atrophy and debility	223	315	293	269	85	.....	10.2	14.7	14.6	15.2	5.5	.....
CLASS V.—VIOLENT DEATHS.	1,144	993	1,034	898	733	613	52.4	46.4	51.8	50.6	47.4	46.4
V.—*Order 1. Accident*	1,020	837	534	497	413	349	46.7	39.1	26.7	28.0	26.7	26.4
1. Fractures and contusions	.....	35	29	21	17	12	.....	1.6	1.5	1.2	1.1	.9
2. Wounds	.....	2	27	27	17	18	.....	.1	1.3	1.5	1.1	1.4
3. Burns and scalds	94	69	67	87	64	70	4.3	3.2	3.3	4.9	4.1	5.3
4. Poison	37	31	32	36	31	26	1.7	1.5	1.6	2.0	2.0	1.9
5. Drowning	164	146	154	141	140	102	7.5	6.8	7.7	7.9	9.0	7.7
6. Suffocation	27	23	28	24	22	16	1.2	1.1	1.4	1.4	1.4	1.2
7. Railroad accidents	74	86	91	78	41	39	3.4	4.0	4.5	4.4	2.7	3.0
8. Other casualties	624	507	485	385	328	274	28.6	23.7	24.2	21.6	21.2	20.8
V.—*Order 2. Homicide*	17	15	24	20	12	13	.8	.7	1.2	1.1	.7	.9
V.—*Order 3. Suicide*	107	79	98	81	62	44	4.9	3.7	4.9	4.6	4.0	3.3
Unclassified	152	107	82	77	59	39	7.0	5.0	4.1	4.3	3.8	3.0
Causes unknown	1,915	1,768	1,254	1,299	1,356	1,381	87.6	82.6	62.6	73.2	87.7	104.7

* 10 cases in 1892; see Table 82 and p. 222.

Table 90.—*Exhibiting by sex, by months, by specified causes in alphabetical order, and by ages in periods of years, the number of deaths returned for the year 1892: also, by sex and specified causes, the number of deaths returned for each of the years 1887-92, inclusive. (Still-births included.)*

Sex.	Months, 1892.													Years, 1887-92.						Ages in periods of years, 1892.																					
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	1892.	1891.	1890.	1889.	1888.	1887.	Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.
Total	2152	1687	1734	1879	1700	1481	1678	1942	1802	1892	1788	1949	45	21729	22079	21642	20315	21764	19482	7295	967	526	770	949	890	808	725	628	723	726	819	942	1074	1126	1006	1330	425
Males	1148	906	944	997	909	817	962	1059	999	1033	990	1051	22	11887	11908	11801	10984	11722	10563	4096	532	270	367	466	413	407	356	314	393	415	471	510	604	658	592	732	241
Females	990	777	786	873	788	657	710	879	797	854	785	891	22	9809	9998	9771	9297	10024	8877	3146	435	256	403	483	477	401	369	314	330	311	348	432	470	468	414	598	154
Unknown	14	4	4	9	3	7	6	4	6	5	13	7	1	33	173	70	34	18	42	53	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	30

Table 90.—CONTINUED.—*Causes of death—Alphabetical list.*

Sex.	Months, 1892.												Years, 1887-92.						Causes of death.	Ages in periods of years, 1892.																	
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	1892.	1891.	1890.	1889.	1888.	1887.		Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.
Total							1		1	1				3	2	5	5	7	4	Liver, Cirrhosis of								1		1	1						
Males							1							1		3	4	4	3	" " "																	
Females									1	1				2	2	2	1	3	1	" " "								1			1						
Total		1	1	1	1	1			1		1			7	8					Liver, Congestion of					1		1			1		2		1	1		
Males				1	1				1		1			4	2					" "					1		1			1					1		
Females		1	1			1								3	6					" "											2		1				
Total	4	3	4	6	5	5	5	7	2	5	3	2		51	71	79	88	87	86	Liver, Disease of	3	2					3	2	2	5	4	4	7	12	2	4		1
Males	1	1	2	3	2	2	2	5		1	2	2		23	46	43	57	50	48	" "	1						1			2	4	4	2	6		2		1
Females	3	2	2	3	3	3	3	2	2	4	1			28	25	36	31	37	38	" "	2	2					2	2	2	3			5	6	2	2		
Total		2	1	2	3		2		1	1	1	1		14	16	12	16	25	11	Liver, Enlargement of						2	1			1		2	3	4	1		
Males		1		2	1		2				1	1		8	9	5	11	13	4	" "						1				1		1	2	3			
Females		1	1		2				1	1				6	7	7	5	12	7	" "						1	1				1	1	1	1			
Total		1	1		1			2		2				7	4	6	6	13	14	Liver, Inflammation of	1				1			1	1			2	1				
Males			1		1			1		2				5	1	3	5	8	9	" "	1							1	1			1	1				
Females		1						1						2	3	3	1	5	5	" "					1							1					
Males															1					Loss of mother																	
Males															1					Lumbago																	
Females															1					"																	
Total	1		1	1	1			1	1	1		2		9	7	9	6	9	4	Lungs, Abscess of	2	1					1				1	1	1		2		
Males			1	1	1				1			2		6	5	3	3	4	4	" "	2	1					1				1				1		
Females	1							1		1				3	2	6	3	5		" "											1		1		1		
Males		1												1	2				1	Lungs, Collapse of	1																

| | | |

Table 90.—CONTINUED.—*Causes of death—Alphabetical list.*

Sex.	Months, 1892.												Years, 1887-92.						Causes of death.	Ages and periods of years, 1892.																	
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	1892.	1891.	1890.	1889.	1888.	1887.		Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.
Total	...	1	...	...	...	...	1	1	...	1	...	...	...	4	3	4	2	...	...	Meningitis, Cerebral	2	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Males	...	1	...	...	...	...	...	1	...	1	...	...	...	3	1	3	2	...	...	" "	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Females	...	...	...	...	...	...	1	...	...	...	...	...	...	1	2	1	...	...	...	" "	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	1	1	1	1	...	...	3	...	...	...	...	...	...	7	12	5	4	15	8	Meningitis, Cerebro-spin.	4	1	...	1	...	...	...	1	...	...	...	...	...	...	...	...
Males	...	1	1	1	...	...	3	...	...	...	...	...	...	6	5	4	1	6	4	" "	3	1	...	1	...	...	...	1	...	...	...	...	...	...	...	...
Females	1	...	...	...	...	...	...	...	...	...	...	...	...	1	7	1	3	9	4	" "	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	7	2	6	8	6	3	6	10	3	2	4	6	...	63	84	74	62	68	77	Meningitis, Spinal	42	5	6	3	1	...	1	...	...	...	1	...	...	1	...	...	3
Males	2	1	3	3	5	1	3	3	3	1	4	3	...	32	38	37	26	37	38	" "	24	1	3	...	...	...	1	...	...	...	1	...	...	1	...	...	1
Females	5	1	3	5	1	2	3	7	...	1	...	3	...	31	46	37	36	26	39	" "	18	4	3	3	1	...	...	...	...	...	...	...	...	...	...	...	2
Total	...	...	...	1	...	...	...	...	1	...	...	...	...	2	4	4	4	7	4	Meningitis, Tubercular	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Males	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	3	2	3	1	" "	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Females	...	...	...	1	...	...	...	...	1	...	...	...	...	2	2	1	2	4	3	" "	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Males	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	Milk, Diseased	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	...	...	...	...	...	...	...	1	1	5	1	2	...	10	9	...	6	7	3	Mouth, Disease of	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Males	...	...	...	...	...	...	...	...	1	2	...	2	...	5	3	...	3	2	2	" " "	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Females	...	...	...	...	...	...	...	1	...	3	1	...	...	5	6	...	3	5	1	" " "	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	...	1	...	1	...	1	1	...	...	...	...	...	...	4	7	...	1	3	2	Mumps	2	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Males	...	...	...	1	...	1	1	...	...	...	...	...	...	3	6	...	...	3	...	"	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Females	...	1	...	...	...	...	...	...	...	...	...	...	...	1	1	...	1	...	2	"	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Males	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	Muscles, Disease of	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Females														1					
Males														1	5	1			
Females															1				
Males														1					
Males														3	2				
Females			1										1				2	3	
Total			2		1	1			2			2	8	10	7	16	14	12	
Males			1		1				1			1	4	5	2	8	8	2	
Females			1			1			1			1	4	5	5	8	6	10	
Males										1			1	1		1			
Females											1		1						
Total	122	91	80	102	75	63	85	78	72	109	99	96	4	1079	1014	980	965	1174	917
Males	61	48	40	55	34	33	47	35	34	52	43	49	2	533	521	510	512	586	468
Females	61	46	40	47	41	30	38	43	38	57	56	47	2	546	493	470	453	588	449
Males																1		1	1
Females		1	1		1	1		1	1		1			7	1				1
Total	50	35	41	52	39	36	42	46	48	51	38	63	1	542	564	558	533	552	450
Males	32	15	18	35	21	23	26	25	28	26	22	35		306	310	315	298	290	251
Females	18	20	23	17	18	13	16	21	20	25	16	28	1	236	254	243	235	262	199
Total	2			1		1	2		1	5	1	2		15	8				
Males							1		1	5		1		8	4				
Females	2			1		1	1				1	1		7	4				
Total	1	1	3	1	1	1					1	1		10	24		9	1	15
Males	1	1	3		1							1		7	19		5		14
Females				1		1					1			3	5		4	1	1
Males															1				
Females															1				

Navel, Inflammation of																			
Navel, Hemorrhage of																			
" " "																			
Navel, Rupture of																			
Nerves, Disease of																			
" " "																	1		
Neuralgia	1						1							1			2	2	1
"							1							1			1	1	
"	1																1	1	1
Œsophagus, Stricture of																	1		
" " "																	1		
Old age													3	8	34	132	235	652	15
" "													2	2	17	55	123	331	3
" "													1	6	17	77	112	321	12
Opium eating																			
Ovaries, Disease of								2	2	2			1						
Paralysis	11	2		6	3	7	5	9	14	19	21	34	64	77	90	84	86	10	
"	5	1		2	3	4	2	5	5	10	12	24	29	48	51	51	47	7	
"	6	1		4		3	3	4	9	9	9	10	35	29	39	33	39	3	
Paralysis, Creeping			1				1			3			3	4		2	1		
" "							1			2			1	2		2			
" "			1							1			2	2			1		
Paralysis, General							1	3	1	1	1		1	1		1			
" "							1	2	1		1			1		1			
" "								1		1			1						
Parotid gland, Abscess of																			
Pemphigus																			

Table 90.—CONTINUED.—*Causes of death—Alphabetical list.*

Sex.	Months, 1892.												Years, 1887-92,						Causes of death.	Ages in periods of years, 1892.																					
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	1892.	1891.	1890.	1889.	1888.	1887.		Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.
Total	13	7	5	13	6	4	7	6	5	8	10	5	..	89	116	98	50	46	35	Peritonitis	7	6	8	4	8	10	15	11	2	8	2	4	1	2	..	1	..	..
Males	5	1	3	5	1	1	2	2	4	4	3	3	..	34	41	50	20	21	13	"	5	4	3	..	3	2	5	3	..	3	1	2	1	1	..	1	..	..
Females	8	6	2	8	5	3	5	4	1	4	7	2	..	55	75	48	30	25	22	"	2	2	5	4	5	8	10	8	2	5	1	2	..	1	..	..	..	..
Males	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	Peritonitis, Tubercular	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	" "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	Pharyngitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	Phlebitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Males	..	..	..	..	..	..	..	1	..	..	..	..	..	1	1	..	1	1	..	Piles	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	7	3	4	2	3	1	..	..	2	2	5	1	..	30	22	27	25	46	25	Pleurisy	6	..	1	..	1	1	2	1	1	4	..	2	3	2	2	..	2	2
Males	5	1	2	1	3	1	..	..	1	2	1	..	..	17	10	14	12	23	16	"	5	..	..	..	1	..	1	..	..	1	..	2	2	2	..	..	1	2
Females	2	2	2	1	..	..	..	..	1	..	4	1	..	13	12	13	13	23	9	"	1	..	1	..	..	1	1	1	1	3	..	..	1	..	2	..	1	..
Total	..	..	1	1	..	..	..	..	..	..	..	1	..	3	2	4	9	10	2	Pleuro-pneumonia	..	..	..	1	..	..	..	..	..	..	1	..	..	1	..	..	..	..
Males	..	..	..	1	..	..	..	..	..	..	..	..	..	1	2	..	1	5	1	" "	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Females	..	..	1	..	..	..	..	..	..	..	..	1	..	2	..	4	8	5	1	" "	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..
Total	272	163	119	129	89	63	58	39	49	67	87	109	2	1246	1185	852	1048	1190	884	Pneumonia *	430	33	18	47	38	41	44	32	30	47	48	67	77	88	73	59	62	12
Males	150	88	66	73	59	30	36	21	33	35	47	70	2	710	703	490	606	654	522	"	233	20	11	28	25	19	24	22	16	34	31	45	37	43	44	31	41	6
Females	122	74	53	56	30	33	22	18	16	32	40	39	..	535	481	362	442	536	362	"	197	13	7	19	13	22	20	10	14	13	17	22	40	45	29	28	21	5
Unknown	..	1	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Total	10	3	2	3	2	3	1	4	1	4	3	6	..	42	56	33	73	101	80	Pneumonia, Typhoid	1	2	4	5	3	7	1	1	2	3	..	1	3	1	1	2	3	2
Males	1	2	1	2	1	2	..	2	1	3	2	5	..	22	26	18	49	59	54	" "	1	2	1	4	1	3	1	..	1	1	..	..	..	1	1	1	2	2

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Table 90.—Continued.—*Causes of death.—Alphabetical list.*

Sex.	Months, 1892.												Years, 1887-1892.						Causes of death.	Ages in periods of years, 1892.															
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	1892.	1891.	1890.	1889.	1888.	1887.		Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.
Total	3	...	1	1	...	2	1	2	4	4	1	...	19	19	23	14	16	29	Indigestion	18	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Males	2	...	1	...	...	2	1	1	4	3	1	...	15	8	12	8	8	20	"	14	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Females	1	...	...	1	...	...	...	1	...	1	...	...	4	11	11	6	8	9	"	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	...	...	3	2	3	2	...	2	...	...	...	...	12	16	127	621	643	658	Infantile*	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Males	...	...	2	...	1	2	...	...	...	...	...	...	5	11	74	355	396	407	"	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Females	...	...	1	2	2	...	...	2	...	...	...	...	7	5	50	263	246	250	"	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Unknown	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	3	1	1	"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	3	4	4	4	2	1	6	5	4	6	6	7	52	38	69	47	40	43	Inflammation	31	1	1	1	2	3	4	2	2	...	...	1	1	1	...	1	1	...
Males	...	2	1	2	2	1	2	3	2	3	4	5	27	21	29	23	19	18	"	17	1	...	1	1	...	3	2	...	...	...	...	...	1	...	1	...	...
Females	3	2	3	2	...	...	4	2	2	3	2	2	25	16	40	24	21	25	"	14	...	1	...	1	3	1	...	2	...	...	1	1	...	...	...	1	...
Unknown	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	351	209	99	58	35	24	18	19	17	19	30	28	907	1076	1084	176	2	2	Influenza	125	12	13	19	15	16	16	30	30	26	48	36	66	86	99	135	130	5
Males	189	118	48	24	18	11	8	11	13	11	17	10	478	569	575	96	1	1	"	75	7	4	10	8	7	6	9	16	13	23	17	34	45	58	75	67	4
Females	162	91	51	34	17	13	10	8	4	8	13	18	429	507	509	80	1	1	"	50	5	9	9	7	9	10	21	14	13	25	19	32	41	41	60	63	1
Total	2	8	3	5	3	5	3	2	4	7	6	5	53	39	30	26	26	33	Insanity	...	...	...	1	...	4	4	9	7	6	5	6	5	2	2	1	...	1
Males	2	5	2	5	1	3	2	2	3	3	4	3	35	20	14	13	12	10	"	...	...	...	1	...	1	2	6	5	6	4	2	4	2	1	...	...	1
Females	...	3	1	...	2	2	1	...	1	4	2	2	18	19	16	13	14	23	"	...	...	...	...	...	3	2	3	2	...	1	4	1	...	1	1	...	...
Total	4	5	1	2	2	1	6	3	2	3	1	3	1	34	27	21	18	19	15	Intemperance	...	...	...	1	1	3	6	...	3	3	5	5	2	2	1	1	...	1
Males	4	5	1	2	2	1	6	3	...	3	1	3	1	32	23	21	13	18	14	"	...	...	...	1	1	3	6	...	3	3	4	4	2	2	1	1	...	1
Females	...	...	...	...	...	...	...	...	2	...	...	...	2	4	...	5	1	1	"	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...

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Table 90.—CONTINUED.—*Causes of death—Alphabetical list.*

Sex.	Months, 1892.												Years, 1887-92.						Causes of death.	Ages in periods of years, 1892.																	
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	1892.	1891.	1890.	1889.	1888.	1887.		Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.
Total							1		1	1				3	2	5	5	7	4	Liver, Cirrhosis of							1		1	1							
Males							1							1		3	4	4	3	" " "									1								
Females									1	1				2	2	2	1	3	1	" " "							1			1						
Total		1	1	1	1	1			1		1			7	8					Liver, Congestion of					1		1		1		2		1	1		
Males				1	1				1		1			4	2					" "					1		1						1			
Females		1	1			1								3	6					" "										2		1				
Total	4	3	4	6	5	5	5	7	2	5	3	2		51	71	79	88	87	86	Liver, Disease of	3	2					3	2	2	5	4	4	7	12	2	4	1
Males	1	1	2	3	2	2	2	5		1	2	2		23	46	43	57	50	48	" "	1						1			2	4	4	2	6		2	1
Females	3	2	2	3	3	3	3	2	2	4	1			28	25	36	31	37	38	" "	2	2					2	2	2	3			5	6	2	2	
Total		2	1	2	3		2		1	1	1	1		14	16	12	16	25	11	Liver, Enlargement of						2	1			1		2	3	4	1		
Males		1		2	1		2				1	1		8	9	5	11	13	4	" "						1				1		1	2	3			
Females		1	1		2				1	1				6	7	7	5	12	7	" "						1	1					1	1	1	1		
Total		1	1		1			2		2				7	4	6	6	13	14	Liver, Inflammation of	1				1				1	1				2	1		
Males			1		1			1		2				5	1	3	5	8	9	" "	1								1	1				1	1		
Females		1						1						2	3	3	1	5	5	" "					1									1			
Males															1					Loss of mother																
Males															1					Lumbago																
Females															1					"																
Total	1		1	1	1			1	1	1		2		9	7	9	6	9	4	Lungs, Abscess of	2	1					1			1	1	1		2			
Males			1	1	1				1			2		6	5	3	3	4	4	" "	2	1					1				1			1			
Females	1							1		1				3	2	6	3	5		" "										1		1		1			
Males		1												1	2				1	Lungs, Collapse of	1																

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Table 90.—CONTINUED.—*Causes of death—Alphabetical list.*

Sex.	Months, 1892.												Years, 1887-92.						Causes of death.	Ages and periods of years, 1892.																	
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	1892.	1891.	1890.	1889.	1888.	1887.		Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.
Total	...	1	...	...	...	...	1	1	...	1	...	...	...	4	3	4	2	...	...	Meningitis, Cerebral	2	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Males	...	1	...	...	...	...	...	1	...	1	...	...	...	3	1	3	2	...	...	" "	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Females	...	...	...	...	...	...	1	...	...	...	...	...	...	1	2	1	...	...	...	" "	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	1	1	1	1	...	...	3	...	...	...	...	...	...	7	12	5	4	15	8	Meningitis, Cerebro-spin.	4	1	...	1	...	...	...	1	...	...	...	...	...	...	...	...
Males	...	1	1	1	...	...	3	...	...	...	...	...	...	6	5	4	1	6	4	" "	3	1	...	1	...	...	...	1	...	...	...	...	...	...	...	...
Females	1	...	...	...	...	...	...	...	...	...	...	...	...	1	7	1	3	9	4	" "	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	7	2	6	8	6	3	6	10	3	2	4	6	...	63	84	74	62	63	77	Meningitis, Spinal	42	5	6	3	1	...	1	...	...	...	...	1	...	...	1	...	3
Males	2	1	3	3	5	1	3	3	3	1	4	3	...	32	38	37	26	37	38	" "	24	1	3	...	...	...	1	...	...	...	...	1	...	...	1	...	1
Females	5	1	3	5	1	2	3	7	...	1	...	3	...	31	46	37	36	26	39	" "	18	4	3	3	1	...	...	...	...	...	...	...	...	...	...	...	2
Total	...	...	...	1	...	...	...	...	1	...	...	...	...	2	4	4	4	7	4	Meningitis, Tubercular	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Males	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	3	2	3	1	" "	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Females	...	...	...	1	...	...	...	...	1	...	...	...	...	2	2	1	2	4	3	" "	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Males	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	Milk, Diseased	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	...	...	...	...	...	...	...	1	1	5	1	2	...	10	9	...	6	7	3	Mouth, Disease of	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Males	...	...	...	...	...	...	...	...	1	2	...	2	...	5	3	...	3	2	2	" " "	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Females	...	...	...	...	...	...	...	1	...	3	1	...	...	5	6	...	3	5	1	" " "	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	...	1	...	1	...	1	1	...	...	...	...	...	...	4	7	...	1	3	2	Mumps	2	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Males	...	...	...	1	...	1	1	...	...	...	...	...	...	3	6	...	...	3	...	"	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Females	...	1	...	...	...	...	...	...	...	...	...	...	...	1	1	...	1	...	2	"	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Males	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	Muscles, Disease of	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

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Table 90.—CONTINUED.—*Causes of death.—Alphabetical list.*

Sex.	Months, 1892.												Years, 1887-92.						Causes of death.	Ages in periods of years, 1892.																	
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	1892.	1891.	1890.	1889.	1888.	1887.		Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.
Total	13	7	5	13	6	4	7	6	5	8	10	5	..	89	116	98	50	46	35	Peritonitis	7	6	8	4	8	10	15	11	2	8	2	4	1	2	..	1	..	..
Males	5	1	3	5	1	1	2	2	4	4	3	3	..	34	41	50	20	21	13	"	5	4	3	..	3	2	5	3	..	3	1	2	1	1	..	1	..	..
Females	8	6	2	8	5	3	5	4	1	4	7	2	..	55	75	48	30	25	22	"	2	2	5	4	5	8	10	8	2	5	1	2	..	1	..	..	..	..
Males	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	Peritonitis, Tubercular	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	" "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	Pharyngitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	Phlebitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Males	..	..	..	..	..	..	..	1	..	..	..	..	..	1	1	..	1	1	..	Piles	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	7	3	4	2	3	1	..	..	2	2	5	1	..	30	22	27	25	46	25	Pleurisy	6	..	1	..	1	1	2	1	1	4	..	2	3	2	2	..	2	2
Males	5	1	2	1	3	1	..	..	1	2	1	..	..	17	10	14	12	23	16	"	5	..	..	..	1	..	1	..	..	1	..	2	2	2	..	..	1	2
Females	2	2	2	1	..	..	..	..	1	..	4	1	..	13	12	13	13	23	9	"	1	..	1	..	..	1	1	1	1	3	..	..	1	..	2	..	1	..
Total	..	..	1	1	..	..	..	..	..	..	..	1	..	3	2	4	9	10	2	Pleuro-pneumonia	..	..	..	1	..	..	..	..	..	..	1	..	..	1	..	..	..	..
Males	..	..	..	1	..	..	..	..	..	..	..	..	..	1	2	..	1	5	1	" "	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Females	..	..	1	..	..	..	..	..	..	..	..	1	..	2	..	4	8	5	1	" "	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..
Total	272	163	119	129	89	63	58	39	49	67	87	109	2	1246	1185	852	1048	1190	884	Pneumonia *	430	38	18	47	38	41	44	32	30	47	48	67	77	88	73	59	62	12
Males	150	88	66	73	59	30	36	21	33	35	47	70	2	710	703	490	606	654	522	"	233	20	11	28	25	19	24	22	16	34	31	45	37	43	44	31	41	6
Females	122	74	53	56	30	33	22	18	16	32	40	39	..	535	481	362	442	536	362	"	197	13	7	19	13	22	20	10	14	13	17	22	40	45	29	28	21	5
Unknown	..	1	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Total	10	3	2	3	2	3	1	4	1	4	3	6	..	42	56	33	73	101	80	Pneumonia, Typhoid	1	2	4	5	3	7	1	1	2	3	..	1	3	1	1	2	3	2
Males	1	2	1	2	1	2	..	2	1	3	2	5	..	22	26	18	49	59	54	" "	1	2	1	4	1	3	1	..	1	1	..	..	..	1	1	1	2	2

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Table 90.—CONTINUED.—*Causes of death—Alphabetical list.*

Sex.	Months, 1892.												Years, 1887-92.						Causes of death.	Ages in periods of years, 1892.																	
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	1892.	1891.	1890.	1889.	1888.	1887.		Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.
Total			3		2		1							6	4	4	7	5	6	Heart, Fatty degeneration of							1	1			1		1		
Males			2											2	1	2	4	2	5	" " "											1	1					
Females			1		2		1							4	3	2	3	3	1	" " "							1	1					1		1	
Total		1		1	3		1	1	1					8	3	9	9	11	9	Heart, Hypertrophy of								1	1	3	2		1				
Males				1	2		1	1						5	2	5	6	6	3	" "								1	1		2		1				
Females		1			1				1					3	1	4	3	5	6	" "										3							
Males																1		5		Heart, Inflammation of																	
Females															2	1	4	5	2	" "																	
Total	1	1	1	2	1	4	2	1		1	4	3		21	32	9	36	37	34	Heart, Neuralgia of					1		1	1	1	1	1		3	6	2	2	1
Males	1	1				3	1			1	1	2		10	21	7	24	19	16	" "								1		1	1		2	2		2	1
Females			1	2	1	1	1	1			3	1		11	11	2	12	18	18	" "					1		1	1					1	4	2		
Males															1					Heart, Ossification of																	
Males																		2		Heart, Palpitation of																	
Females															2	1		2		" "																	
Total	2	1	5	3	2		2	1	1		2	1		20	23	28	31	35	33	Heart, Paralysis of					1						2	2	7	4	2	2	
Males	1	1	3	1	1		1	1	1		1	1		12	13	10	19	15	19	" "					1						2	1	3	2	2	1	
Females	1		2	2	1		1				1			8	10	18	12	20	14	" "												1	4	2		1	
Females						1					1			2						Heart, Pericarditis of		1						1									
Total	5	3	2	3	4	2	1	3	1	3	2			29	21	16	38	39	38	Heart, Rheumatism of*	1	1	3		1		2	2		3	2	3	1		3	4	1	2
Males	5	2	1	2	3	2		2		1				18	15	7	27	24	29	" "	1		1		1		2			1	1	3			3	3	1	1
Females		1	1	1	1		1	1	1	2	2			11	6	9	11	15	9	" "		1	2					2		2	1		1		1		1

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Table 90.—CONTINUED.—*Causes of death.—Alphabetical list.*

Sex.	Months, 1892.												Years, 1887-1892.						Causes of death.	Ages in periods of years, 1892.																	
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	1892.	1891.	1890.	1889.	1888.	1887.		Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.
Total	3		1	1		2	1	2	4	4	1			19	19	23	14	16	29	Indigestion	18															1	
Males	2		1			2	1	1	4	3	1			15	8	12	8	8	20	"	14															1	
Females	1			1				1		1				4	11	11	6	8	9	"	4																
Total			3	2	3	2		2						12	16	127	621	643	658	Infantile*	11																1
Males			2		1	2								5	11	74	355	396	407	"	4																1
Females			1	2	2			2						7	5	50	263	246	250	"	7																
Unknown																3	3	1	1	"																	
Total	3	4	4	4	2	1	6	5	4	6	6	7		52	38	69	47	40	43	Inflammation	31	1	1	1	2	3	4	2	2			1	1	1		1	1	
Males		2	1	2	2	1	2	3	2	3	4	5		27	21	29	23	19	18	"	17	1		1	1		3	2					1		1		
Females	3	2	3	2			4	2	2	3	2	2		25	16	40	24	21	25	"	14		1		1	3	1		2			1	1			1	
Unknown															1					"																	
Total	351	209	99	58	35	24	18	19	17	19	30	28		907	1076	1084	176	2	2	Influenza	125	12	13	19	15	16	16	30	30	26	48	36	66	88	99	135	130	5
Males	189	118	48	24	18	11	8	11	13	11	17	10		478	569	575	96	1	1	"	75	7	4	10	8	7	6	9	16	13	23	17	34	45	58	75	67	4
Females	162	91	51	34	17	13	10	8	4	8	13	18		429	507	509	80	1	1	"	50	5	9	9	7	9	10	21	14	13	25	19	32	41	41	60	63	1
Total	2	8	3	5	3	5	3	2	4	7	6	5		53	39	30	26	26	33	Insanity				1		4	4	9	7	6	5	6	5	2	2	1		1
Males	2	5	2	5	1	3	2	2	3	3	4	3		35	20	14	13	12	10	"				1		1	2	6	5	6	4	2	4	2	1			1
Females		3	1		2	2	1		1	4	2	2		18	19	16	13	14	23	"						3	2	3	2		1	4	1		1	1		
Total	4	5	1	2	2	1	6	3	2	3	1	3	1	34	27	21	18	19	15	Intemperance				1	1	3	6		3	3	5	5	2	2	1	1		1
Males	4	5	1	2	2	1	6	3		3	1	3	1	32	23	21	13	18	14	"				1	1	3	6		3	3	4	4	2	2	1	1		1
Females									2					2	4		5	1	1	"										1	1						

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Table 90.—CONTINUED.—*Causes of death—Alphabetical list.*

Sex.	Months, 1892.												Years, 1887-92.						Causes of death.	Ages in periods of years, 1892.																	
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	1892.	1891.	1890.	1889.	1888.	1887.		Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.
Total							1		1	1				3	2	5	5	7	4	Liver, Cirrhosis of							1		1	1							
Males							1							1		3	4	4	3	" " "									1								
Females									1	1				2	2	2	1	3	1	" " "							1			1						
Total		1	1	1	1	1			1		1			7	8					Liver, Congestion of					1		1			1		2		1	1		
Males				1	1				1		1			4	2					" "					1		1			1					1		
Females		1	1			1								3	6					" "											2		1				
Total	4	3	4	6	5	5	5	7	2	5	3	2		51	71	79	88	87	86	Liver, Disease of	3	2					3	2	2	5	4	4	7	12	2	4		1
Males	1	1	2	3	2	2	2	5		1	2	2		23	46	43	57	50	48	" "	1						1			2	4	4	2	6		2		1
Females	3	2	2	3	3	3	3	2	2	4	1			28	25	36	31	37	32	" "	2	2					2	2	2	3			5	6	2	2		
Total		2	1	2	3		2		1	1	1	1		14	16	12	16	25	11	Liver, Enlargement of						2	1			1		2	3	4	1			
Males		1		2	1		2				1	1		8	9	5	11	13	4	" "						1				1		1	2	3				
Females		1	1		2				1	1				6	7	7	5	12	7	" "						1	1				1	1	1	1			
Total		1	1		1			2		2				7	4	6	6	13	14	Liver, Inflammation of	1				1			1	1				2	1				
Males			1		1			1		2				5	1	3	5	8	9	" "	1							1	1				1	1				
Females		1						1						2	3	3	1	5	5	" "					1								1					
Males															1					Loss of mother																	
Males															1					Lumbago																	
Females															1					"																	
Total	1		1	1	1			1	1	1		2		9	7	9	6	9	4	Lungs, Abscess of	2	1					1			1	1	1		2			
Males			1	1	1				1			2		6	5	3	3	4	4	" "	2	1					1				1			1			
Females	1							1		1				3	2	6	3	5		" "											1		1		1			
Males		1												1	2				1	Lungs, Collapse of	1																	

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Table 90.—CONTINUED.—*Causes of death—Alphabetical list.*

Sex.	Months, 1892.												Years, 1887-92.						Causes of death.	Ages and periods of years, 1892.																	
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	1892.	1891.	1890.	1889.	1888.	1887.		Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.
Total		1					1	1		1				4	3	4	2			Meningitis, Cerebral	2	1					1										
Males		1						1		1				3	1	3	2			" "	2						1										
Females							1							1	2	1				" "		1															
Total	1	1	1	1			3							7	12	5	4	15	8	Meningitis, Cerebro-spin.	4	1		1				1									
Males		1	1	1			3							6	5	4	1	6	4	" "	3	1		1				1									
Females	1													1	7	1	3	9	4	" "	1																
Total	7	2	6	8	6	3	6	10	3	2	4	6		63	84	74	62	63	77	Meningitis, Spinal	42	5	6	3	1		1				1			1			3
Males	2	1	3	3	5	1	3	3	3	1	4	3		32	38	37	26	37	35	" "	24	1	3				1				1			1			1
Females	5	1	3	5	1	2	3	7		1		3		31	46	37	36	26	39	" "	18	4	3	3	1												2
Total				1					1					2	4	4	4	7	4	Meningitis, Tubercular	2																
Males															2	3	2	3	1	" "																	
Females				1					1					2	2	1	2	4	3	" "	2																
Males															1					Milk, Diseased																
Total								1	1	5	1	2		10	9		6	7	3	Mouth, Disease of	10																
Males									1	2		2		5	3		3	2	2	" " "	5																
Females								1		3	1			5	6		3	5	1	" " "	5																
Total		1		1		1	1							4	7		1	3	2	Mumps	2	1		1													
Males				1		1	1							3	6			3		"	1	1		1													
Females		1												1	1		1		2	"	1																
Males															1					Muscles, Disease of																

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Table 90.—CONTINUED.—*Causes of death.—Alphabetical list.*

Sex.	Months, 1892.												Years, 1887-92.						Causes of death.	Ages in periods of years, 1892.																	
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	1892.	1891.	1890.	1889.	1888.	1887.		Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.
Total	13	7	5	13	6	4	7	6	5	8	10	5	..	89	116	98	50	46	35	Peritonitis	7	6	8	4	8	10	15	11	2	8	2	4	1	2	..	1	..
Males	5	1	3	5	1	1	2	2	4	4	3	3	..	34	41	50	20	21	13	"	5	4	3	..	3	2	5	3	..	3	1	2	1	1	..	1	..
Females	8	6	2	8	5	3	5	4	1	4	7	2	..	55	75	48	30	25	22	"	2	2	5	4	5	8	10	8	2	5	1	2	..	1	..	..	..
Males	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	Peritonitis, Tubercular	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	" "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	Pharyngitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	Phlebitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Males	..	..	..	..	..	..	..	1	..	..	..	..	..	1	1	..	1	1	..	Piles	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	7	3	4	2	3	1	..	..	2	2	5	1	..	30	22	27	25	46	25	Pleurisy	6	..	1	..	1	1	2	1	1	4	..	2	3	2	2	..	2	2
Males	5	1	2	1	3	1	..	..	1	2	1	..	..	17	10	14	12	23	16	"	5	..	..	..	1	..	1	..	..	1	..	2	2	2	..	..	1	2
Females	2	2	2	1	..	..	..	..	1	..	4	1	..	13	12	13	13	23	9	"	1	..	1	..	..	1	1	1	1	3	..	..	1	..	2	..	1	..
Total	..	..	1	1	..	..	..	..	..	..	..	1	..	3	2	4	9	10	2	Pleuro-pneumonia	..	..	..	1	..	..	..	..	..	..	1	..	..	1	..	..	..
Males	..	..	..	1	..	..	..	..	..	..	..	..	..	1	2	..	1	5	1	" "	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..
Females	..	..	1	..	..	..	..	..	..	..	..	1	..	2	..	4	8	5	1	" "	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..
Total	272	163	119	129	89	63	58	39	49	67	87	109	2	1246	1185	852	1048	1190	884	Pneumonia *	430	38	18	47	38	41	44	32	30	47	48	67	77	88	73	59	62	12
Males	150	88	66	73	59	30	36	21	33	35	47	70	2	710	703	490	606	654	522	"	233	20	11	28	25	19	24	22	16	34	31	45	37	43	44	31	41	6
Females	122	74	53	56	30	33	22	18	16	32	40	39	..	535	481	362	442	536	362	"	197	13	7	19	13	22	20	10	14	13	17	22	40	45	29	28	21	5
Unknown	..	1	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Total	10	3	2	3	2	3	1	4	1	4	3	6	..	42	56	33	73	101	80	Pneumonia, Typhoid	1	2	4	5	3	7	1	1	2	3	..	1	3	1	1	2	3	2
Males	1	2	1	2	1	2	..	2	1	3	2	5	..	22	26	18	49	59	54	" "	1	2	1	4	1	3	1	..	1	1	..	..	..	1	1	1	2	2

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Table 90.—CONTINUED.—*Causes of death—Alphabetical list.*

Sex.	Months, 1892.												Years, 1887-92.						Causes of death.	Ages in periods of years, 1892.																					
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	1892.	1891.	1890.	1889.	1888.	1887.		Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.
Total	15	18	18	18	15	7	11	15	9	16	7	18	..	167	172	153	160	157	121	Septicæmia	19	4	3	7	14	20	17	11	8	11	9	7	3	11	9	10	2	2
Males	7	8	11	8	7	3	4	5	5	9	4	9	..	80	88	83	108	77	53	"	11	2	2	1	4	5	7	1	3	4	5	6	2	8	6	9	2	2
Females	8	10	7	10	8	4	7	10	4	7	3	9	..	87	84	70	82	80	68	"	8	2	1	6	10	15	10	10	5	7	4	1	1	3	3	1	..	..
Males	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10	3	7	1	Skin, Disease of	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	6	2	3	" "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	..	..	..	..	1	..	..	..	..	..	..	..	..	1	1	6	2	3	..	Small-pox	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Males	..	..	..	..	1	..	..	..	..	..	..	..	..	1	1	5	2	..	..	"	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	3	..	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Males	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2	..	1	..	Spina bifida	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2	1	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Males	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	1	..	1	Spine, Abscess of	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	" "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Males	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	Spine, Caries of	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Males	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	Spine, Congestion of	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	4	4	7	7	13	11	4	4	15	9	8	8	..	94	99	108	124	113	91	Spine, Disease of	46	10	5	6	3	3	3	..	3	1	2	1	4	3	2	1	1	..
Males	1	1	4	4	6	8	3	2	10	6	2	1	..	48	51	63	53	59	51	" "	26	4	5	4	..	1	2	..	1	..	..	..	2	1	..	1	1	..
Females	3	3	3	3	7	3	1	2	5	3	6	7	..	46	48	45	71	54	40	" "	20	6	..	2	3	2	1	..	2	1	2	1	2	2	2	..	..	..
Males	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	1	..	..	2	Spine, Paralysis of	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	1	2	" "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	..	..	..	..	..	2	..	1	1	..	..	1	..	5	4	1	6	4	1	Spleen, Disease of	..	1	..	..	2	..	1	..	..	..	1	..	..	..	..	..	..	..
Males	..	..	..	..	..	1	..	..	1	..	..	..	..	2	2	1	3	3	1	" "	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..

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Table 90.—Continued.—*Causes of death—Alphabetical list.*

Sex.	Months, 1892.												Years, 1887-92.						Causes of death.	Ages in periods of years, 1892.																							
	January	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	1892.	1891.	1890.	1889.	1888.	1887.		Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.					
Males															2		1		2	Stomach, Rupture of																						
Females															1				1	" "																						
Total	2	1	2	4				1	2	3	3	1		19	17	26	17	21	18	Stomach, Ulceration of							1	2	2	4	2	2	2	4								
Males	1	1	1	1				1		1	1	1		8	8	19	9	14	11	" "							1	1			1	1		4								
Females	1		1	3					2	2	2			11	9	7	8	7	7	" "								1	2	4	1	1	2								
Males				1					1		1			3	1	4				Stricture										1	1			1								
Females		1				1			1					3		2				"	1	1					1																
Total	3	5	8	15	9	9	17	6	8	6	9	12		107	79	108	94	101	105	Suicide			1	6	11	16	5	7	7	9	10	9	6	7	8	3		2			
Males	3	5	6	14	7	5	12	4	6	3	8	9		82	49	90	78	82	75	"				2	8	11	3	6	6	9	8	7	5	6	8	3					
Females			2	1	2	4	5	2	2	3	1	3		25	30	18	16	19	30	"			1	4	3	5	2	1	1		2	2	1	1					2		
Males				1										1		1		1		Suprarenal capsule, Dis. of						1																
Females																1				" " "																						
Males																			1	Syncope																						
Females															1	1		2		"																						
Total	1	1		3		1	1		1		2	1		11	6	7	5	14	4	Syphilis	4				1	2					1	1	2								
Males	1			3		1			1			1		7	3	5	3	8	1	"	3				1	1					1		1								
Females		1					1				2			4	3	2	2	6	3	"	1					1						1	1								
Males																	2		1	Tape worm																						
Females																	1		1	" "																						

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Table 90.—CONCLUDED.—*Causes of death—Alphabetical list.*

Sex.	Months, 1892.												Years, 1887-92.						Causes of death.	Ages in periods of years, 1892.																					
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	1892.	1891.	1890.	1889.	1888.	1887.		Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.
Females	...	1	...	...	1	...	1	1	...	...	...	...	...	4	6	2	8	7	8	Turn of life	...	...	...	...	...	...	...	1	2	...	1	...	...	...	...	...
Males	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	2	8	6	8	Ulcer	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Females	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	3	2	6	"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	160	140	168	146	147	137	138	194	180	158	161	170	16	1915	1768	1510	1234	1224	1249	Unknown *	1202	40	12	24	39	31	36	25	29	30	35	32	38	56	39	27	33	187
Males	88	85	92	69	82	77	86	118	103	87	84	93	9	1073	908	794	630	647	628	"	695	22	7	13	12	6	14	10	13	16	21	20	18	34	26	19	18	109
Females	62	55	76	72	65	58	50	76	76	71	71	74	7	813	774	704	604	577	616	"	503	18	5	11	27	25	22	15	16	14	14	12	20	22	13	8	15	53
Unknown	10	...	...	5	...	2	2	...	1	...	6	3	...	29	86	9	...	...	5	"	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	25
Total	...	1	1	1	2	...	1	3	...	1	1	...	...	11	12	5	4	4	3	Uræmia	...	...	...	...	2	2	...	...	...	1	...	1	...	1	2	...	1	1
Males	...	1	...	1	2	...	...	2	...	1	1	...	...	8	6	2	1	3	2	"	...	...	...	...	...	1	...	...	...	1	...	1	...	1	2	...	1	1
Females	...	...	1	...	...	...	1	1	...	...	...	...	...	3	6	3	3	1	1	"	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...
Males	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	Urethra, Stricture of	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Males	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	3	1	Urinary organs, Dis. of	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Females	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	" " " "	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Females	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	Uterus, Abscess of	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Females	1	1	...	1	...	...	2	1	...	...	...	1	...	7	12	1	8	8	13	Uterus, Disease of	...	...	...	2	...	2	1	...	...	...	1	...	...	...	1	...	...	...
Females	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	1	1	Uterus, Hemorrhage of	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Females	1	...	...	1	...	...	...	...	...	...	1	...	...	3	5	...	2	8	7	Uterus, Inflammation of	...	...	...	...	...	1	...	1	1	...	...	...	...	...	...	...	...	...
Males	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	Vaccination	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Males	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	Venereal Disease	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Females	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	Vomiting	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

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CLIMATIC CONDITIONS AFFECTING CAUSES OF DEATH.

It is impossible to give a satisfactory account of this subject at the present time as certain very important data, namely, the absolute numbers of deaths that occurred in each month of the registration year from each cause, are not known. The numbers given in Table 69 are known to be deficient, and to be more deficient for the early months of the year than for the latter months. While, theoretically, a correction might be applied to individual causes of death as returned by months in order to bring them more nearly in accord with the probable numbers of deaths that actually occurred, in practice it is not easy to ascertain the exact amount of correction, nor to satisfactorily distribute it among the months. Adulterated statistics do not pass current in the statistical world. When a grave deficiency exists, as in Michigan, at the foundation of our registration methods, it is better to exert every effort to remove the defect and to establish a satisfactory system of collection of data, rather than to waste time in basing deductions upon figures known to be in great measure incorrect.

For this reason the comparisons made in previous registration reports of the deaths returned by months from certain causes with meteorological data for the same months are not given. In their stead a somewhat fuller series of tables of meteorological data than usual is taken from the last report of the Secretary of the State Board of Health (for 1891), to which, by the kindness of Dr. Baker, the corresponding data for 1892 (not yet printed) have been added. These reports have long been indebted for excellent meteorological data to the systematized collections of the State Board of Health observers, and it is hoped that the time may soon come, with the passage of a satisfactory registration law, when mortality and meteorological conditions may be directly compared without risk of the serious errors to which such comparison is now liable.

Table 91.—*Average* **temperature** *by year and months in 1892, compared with annual and monthly averages for 1891, 1890, and for the 14 years, 1877-90. These averages are for groups of several stations in Michigan. (Data supplied by State Board of Health.)*

Years, etc.	Average temperature, degrees Fahrenheit.												
	Annual av.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. 14 years, 1877-90...	46.09	21.17	23.43	29.48	44.25	56.00	65.61	70.81	67.84	60.88	49.45	36.49	27.69
1890 (12 stations).....	46.99	30.06	30.07	27.47	45.23	52.41	69.93	71.29	65.28	58.06	48.88	38.60	26.65
1891 (11 stations).....	47.61	26.90	27.33	28.93	47.11	55.40	67.62	66.67	68.16	65.50	49.01	34.57	34.11
1892 (12 stations).....	45.33	18.72	26.26	28.44	42.50	53.73	66.79	70.87	68.91	61.08	48 87	33.61	24.16

Table 92.—*Average* **daily range of temperature** *by year and months in 1892, compared with annual and monthly averages for 1891, 1890, and for the 12 years, 1879–90. These averages are for groups of several stations in Michigan. (Data supplied by State Board of Health.)*

Years, etc.	Average daily range of temperature, degrees Fahrenheit.											
	Annual av.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. 12 years, 1879–90	18.09	16.09	17.66	17.71	19.41	20.38	20.39	20.76	20.11	19.86	17.02	14.36	13.28
1890 (19 stations)	17.38	15.22	13.99	15.92	20.68	18.00	19.96	21.37	20.06	19.67	14.67	14.72	14.23
1891 (16 stations)	18.01	12.90	15.76	14.90	19.57	23.16	21.02	21.33	19.98	21.70	18.18	13.65	14.04
1892 (19 stations)	17.15	16.62	14.06	17.16	19.12	17.22	18.52	22.02	19.98	20.14	18.14	11.60	11.27

Table 93.—*Comparisons of the* **extremes and the range of temperature** *during the year, and during each month of the year 1892, with the average of the extremes, and of the range, for the fourteen years, 1877–90; also, statement of the extremes and of the range for each of the seven years, 1885–91. Observations made with registering thermometers by observers for the State Board of Health and for the U. S. Signal Service. These comparisons, etc., are for groups of several stations in Michigan. (Data supplied by State Board of Health.)*

Year and months.	Extremes and range of temperature,—degrees Fahrenheit.																							
	1885.			1886.			1887.			1888.			1889.			1890.			Av. for 14 years, 1877–90.			1891.			1892.*		
	Highest.	Lowest.	Range.	Highest.	Lowest.	Range.	Highest.	Lowest.	Range.	Highest.	Lowest.	Range.	Highest.	Lowest.	Range.	Highest.	Lowest.	Range.	Highest.	Lowest.	Range.	Highest.	Lowest.	Range.	Highest.	Lowest.	Range.
Year	96	-36	132	101	-30	131	104	-28	132	99	-33	132	97	-23	120	100	-26	126	99	-27	126	100	-14	114	102	-24	126
January	53	-36	89	55	-22	77	54	-28	82	45	-23	68	53	-7	60	66	-14	80	54	-21	75	52	-10	62	57	-22	79
February	50	-33	83	54	-30	84	55	-21	76	49	-33	82	49	-23	72	63	-8	71	57	-20	77	55	-14	69	52	-24	76
March	55	-29	84	73	-25	98	60	-14	74	69	-20	89	65	5	60	59	-26	85	65	-15	80	58	-8	66	64	-13	77
April	84	6	78	84	0	84	82	8	74	88	6	82	80	14	66	80	1	79	83	8	75	87	10	77	79	13	66
May	87	18	69	88	22	66	97	28	69	84	21	63	95	23	72	91	21	70	89	22	67	85	25	60	85	27	58
June	93	32	61	95	27	68	98	40	58	99	29	70	93	36	57	98	32	66	95	32	63	97	31	66	102	34	68
July	96	39	57	101	33	68	104	39	65	97	40	57	97	36	61	98	39	59	98	40	58	95	37	58	97	41	56
August	90	35	55	98	32	66	98	37	61	94	33	61	94	37	57	100	34	66	96	37	59	100	37	63	95	37	58
September	88	25	63	91	27	64	91	26	65	90	28	62	93	25	68	90	27	63	94	28	66	93	35	58	92	30	62
October	81	13	68	83	16	67	80	11	69	73	23	50	76	14	62	80	24	56	84	19	65	87	21	66	82	23	59
November	68	19	49	72	-15	87	70	-6	76	72	8	64	66	11	55	68	0	68	70	1	69	65	-3	68	64	5	59
December	55	-11	66	53	-22	75	56	-6	62	55	1	54	65	2	63	50	-6	56	57	-9	66	60	8	52	58	-11	69
Av. month	75	7	69	79	4	75	79	10	69	76	9	67	77	14	63	79	10	68	79	10	69	78	14	64	77	12	66

* For the 16 years, 1877–92, the highest temperature was 105°, at Battle Creek, September 9, 1884; the lowest was -36°, at Manistique, January 27, 1885.

Table 94.—*Average* **absolute humidity,** *by year and months, in 1892, compared with annual and monthly averages for 1891, 1890, and for the 14 years, 1877-90. These averages are for groups of several stations in Michigan. (Data supplied by State Board of Health.)*

Years, etc.	Absolute humidity,—grains of vapor in a cubic foot of air.												
	Annual av.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. 14 years, 1877-90	3.42	1.43	1.53	1.79	2.75	3.92	5.39	6.08	5.73	4.85	3.54	2.33	1.79
1890 (10 stations)	3.52	2.02	1.95	1.73	2.93	3.72	6.23	5.95	5.46	4.59	3.66	2.46	1.60
1891 (8 stations)	3.54	1.77	1.84	1.79	3.19	3.67	5.86	5.30	5.83	5.42	3.37	2.32	2.14
1892 (10 stations)	3.49	1.35	1.80	1.79	2.61	3.97	6.08	6.23	5.92	4.88	3.34	2.23	1.64

Table 95.—*Average* **relative humidity,** *by years and months, in 1892, compared with annual and monthly averages for 1891, 1890, and for the 13 years, 1878-90. These averages are for groups of several stations in Michigan. (Data supplied by State Board of Health.)*

Years, etc.	Per cent of saturation,—relative humidity.												
	Annual av.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. 13 years, 1878-90	76	82	82	78	70	69	73	72	73	75	76	79	83
1890 (10 stations)	79	87	86	82	73	74	74	69	76	80	83	80	88
1891 (8 stations)	77	87	84	83	74	66	73	70	73	75	75	84	80
1892 (10 stations)	80	88	90	83	71	77	80	72	74	77	75	88	89

Table 96.—*Average per cent of* **cloudiness,** *by year and months, in 1892, compared with annual and monthly averages for 1891, 1890, and for the 14 years, 1877-90. These averages are for groups of several stations in Michigan. (Data supplied by State Board of Health.)*

Years, etc.	Per cent of cloudiness.												
	Annual av.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. 14 years, 1877-90	56	70	64	58	51	50	48	41	43	46	59	68	75
1890 (12 stations)	56	72	69	56	44	60	48	35	43	48	71	61	66
1891 (11 stations)	55	79	70	67	50	40	48	38	47	33	52	80	57
1892 (11 stations)	57	61	77	48	48	68	60	33	38	38	48	85	89

Table 97.—*Inches of* **rain and melted snow,** *by year and months, in 1892, compared with annual and monthly averages for 1891, 1890, and for the 14 years, 1877–90. These averages are for groups of several stations in Michigan.* (*Data supplied by State Board of Health.*)

Years, etc.	Inches of rain and melted snow.												
	Annual av.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. 14 years, 1877-90...	34.97	2.27	2.57	2.28	2.52	3.51	3.94	3.23	3.19	3.24	3.40	3.05	2.65
1890 (20 stations)	30.20	3.53	2.40	2.12	3.37	4.80	3.74	1.47	3.63	2.09	4.97	2.43	1.70
1891 (17 stations)	31.66	1.91	3.13	2.74	2.03	1.33	2.53	2.55	4.41	1.92	1.71	4.86	2.54
1892 (18 stations)	33.08	1.95	2.16	1.39	2.16	5.45	5.17	2.39	2.92	3.01	1.40	3.14	1.95

Table 98.—*Average amount of atmospheric* **ozone (day),** *by year and months, in 1892, compared with annual and monthly averages for 1891, 1890, and for the 14 years, 1877–90. These averages are for groups of several stations in Michigan.* (*Data supplied by State Board of Health.*)

Years, etc.	Ozone by day,—degree of coloration of test-paper.*												
	Annual Av.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. 14 years, 1877-90...	3.29	3.47	3.57	3.61	3.47	3.49	3.29	2.88	3.10	3.05	3.04	3.10	3.39
1890 (8 stations).....	3.69	3.99	3.97	4.19	4.08	4.65	4.13	3.23	3.49	3.44	3.09	2.53	3.49
1891 (8 stations).....	3.99	4.20	4.18	4.46	4.02	4.40	4.10	3.94	3.92	3.82	3.85	3.45	3.59
1892 (7 stations).....	3.95	4.29	4.32	4.18	3.58	4.24	4.39	3.60	4.52	3.56	3.69	3.23	3.83

* Scale of 10 degrees.

Table 99.—*Average amount of atmospheric* **ozone (night),** *by year and months, in 1892, compared with annual and monthly averages for 1891, 1890, and for the 14 years, 1877–90. These averages are for groups of several stations in Michigan.* (*Data supplied by State Board of Health.*)

Years, etc.	Ozone by night,—degree of coloration of test-paper.*												
	Annual Av.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. 14 years, 1877-90...	3.42	3.89	4.10	4.08	3.77	3.66	3.37	2.77	2.79	2.81	3.13	3.31	3.70
1890 (8 stations).....	3.83	3.91	4.57	4.49	4.47	4.83	4.19	3.39	3.51	3.14	3.09	2.63	3.71
1891 (8 stations).....	4.22	4.03	4.86	4.91	4.83	4.41	4.37	4.15	3.92	3.61	3.92	3.51	4.19
1892 (7 stations).....	4.18	4.37	5.05	4.48	4.33	4.58	4.62	3.44	4.56	3.26	3.73	3.49	4.20

* Scale of 10 degrees.

Table 100.—*Average* **velocity of the wind** *in miles per hour, by year and months in 1892, compared with annual and monthly averages for 1891, 1890, and for the 9 years, 1882–90. These averages are for groups of several stations in Michigan. (Data supplied by State Board of Health.)*

Years, etc.	Velocity of the wind,—average miles per hour.											
	Annual Av.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. 9 years, 1882-90	9.5	11.1	10.6	10.3	10.1	9.3	7.9	7.8	7.7	8.6	9.4	10.6	10.9
1890 (7 stations)	9.7	12.1	11.7	11.2	10.3	9.9	7.4	8.3	7.9	8.4	8.6	10.4	10.8
1891 (8 stations)	9.9	8.6	12.1	11.2	9.9	9.7	7.4	8.5	7.2	8.5	10.1	11.7	13.4
1892 (9 stations)	9.2	10.8	8.8	9.2	11.8	9.7	7.5	6.9	7.3	8.4	9.4	10.4	9.8

Table 101.—*Average* **atmospheric pressure,** *by year and months, in 1892, compared with annual and monthly averages for 1891, 1890 and for the 14 years 1877–90. These averages are for groups of several stations in Michigan. (Data supplied by State Board of Health.)*

Years, etc.	Average atmospheric pressure,—inches of mercury.											
	Annual av.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. 14 years, 1877-90	29.157	29.192	29.188	29.150	29.140	29.114	29.109	29.122	29.155	29.193	29.181	29.171	29.175
1890 (12 stations)	29.125	29.187	29.117	29.132	29.195	29.020	29.089	29.115	29.168	29.220	29.028	29.112	29.129
1891 (11 stations)	29.057	29.041	28.993	29.063	29.025	29.118	29.015	29.055	29.085	29.158	29.105	29.048	29.027
1892 (12 stations)	29.096	29.068	29.143	29.117	29.118	28.995	29.017	29.156	29.104	29.152	29.096	29.090	29.101

Table 102.—*Average* **daily range of atmospheric pressure,** *by year and months, in 1892, compared with annual and monthly averages for 1891, 1890 and for the nine years, 1882–90. These averages are for groups of several stations in Michigan. (Data supplied by State Board of Health.)*

Years, etc.	Average daily range of barometer,—inches of mercury.											
	Annual av.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. 9 years, 1882-90	.213	.326	.308	.260	.217	.164	.140	.122	.135	.167	.208	.253	.269
1890 (12 stations)	.234	.400	.308	.256	.259	.195	.137	.136	.163	.167	.186	.287	.315
1891 (10 stations)	.202	.241	.337	.259	.192	.130	.120	.132	.123	.148	.200	.266	.277
1892 (12 stations)	.199	.236	.256	.236	.239	.213	.129	.135	.121	.142	.198	.241	.246

AVERAGE AGES OF DECEDENTS BY OCCUPATIONS.

Table 103 compares the average ages of decedents of each occupation, as returned for the year 1892, with the aggregate for twenty-two years, 1870–91. The table is divided into twelve general classes, under which are arranged the various trades, professions or other occupations returned.

No definite conclusion can be drawn from the age attained by an individual, or by only a few persons engaged in any specified class of work, but when the ages of a sufficient number engaged in any one occupation can be taken collectively, they form a certain basis for an estimate of average longevity or expectation of life in that particular calling.

The facts here given have a certain bearing on the comparative healthfulness of different pursuits. The number and average ages of the living, by occupations, should be known in order to permit of thorough comparison. In fact it may be questioned whether such information is not an essential condition of usefulness of such a table.

The following comparative statements of groups of decedents of high and low average ages at death may become very misleading unless this caution is borne in mind in a general way, since we do not have exact figures available on the subject. Thus *students* show low average ages at death because students are generally young persons, who are enrolled in other occupations as they grow older. *Retired farmers* show a high age at death, for few farmers retire to live upon their incomes while young. In all cases the character of the occupation must be considered in using the figures given in this table.

Classes of decedents showing high average ages at death.

No.	Males.	Average age.	No.	Females.	Average age.
214	Retired	78.9	138	Weavers	68.5
58	Spinners	71.5	160	Paupers	60.1
32	Weavers	71.5	40	Physicians	57.2
75	Retired farmers	71.5	3,323	Farmers	56.8
141	Capitalists	68.8	133	Nurses	56.2
25	Basketmakers	68.4	36	Boarding house keepers	55.7
20	Surveyors	65.8	1,432	Farmers' wives	54.9
478	Clergymen	64.1	15,310	Housekeepers	54.5
184	Millwrights	63.3	170	Tailoresses	52.5
1,027	Shoemakers	61.3	74	Merchants	52.2

Classes of decedents showing low average ages at death.

No.	Males.	Average age.	No.	Females.	Average age.
64	Railroad firemen	22.4	44	Students	22.6
122	Students	23.8	1,571	Domestics	25.8
227	Brakemen	28.4	27	Prostitutes	26.9
12	Electricians	29.1	62	Farmers' daughters	27.3
86	Telegraphers	32.1	140	Clerks	29.8
17	Rivermen	32.2	731	Teachers	31.1
38	Switchmen	33.4	28	Musicians	33.4
29	Loggers	33.9	498	Dressmakers	34.3
1,006	Clerks	34.2	18	Bookkeepers	34.3
140	Woodsmen	34.4	21	Hairdressers	34.5

Table 103.—*Exhibiting, by classified occupations, the number, aggregate and average ages of decedents in Michigan aged twenty years and over, for the year 1892 and for the twenty-two years, 1870-91. (One-half year added to age of each as correction for months not included.)*

Class.	Occupations.	Year, 1892.			Twenty-two years, 1870-91.		
		Number of persons.	Age in years and tenths of a year.		Number of persons.	Age in years and tenths of a year.	
			Aggregate.	Average.		Aggregate.	Average.
	All aged 20 years and over	11,743	649,505.5	55.3	153,822	8,149,233.0	53.0
	All specified occupations	10,178	560,041.0	55.0	142,442	7,540,247.5	52.9
	Occupations unspecified	1,565	89,464.5	57.2	11,380	608,985.5	53.5
I.	*Cultivators of the earth*	2,444	155,079.0	63.5	37,384	2,244,058.5	60.0
II.	*Active mechanics abroad*	294	17,791.0	60.4	4,278	230,188.5	53.8
III.	*Active mechanics in shops*	397	20,973.5	52.3	5,517	280,891.0	50.9
IV.	*Inactive mechanics in shops*	153	7,981.5	52.2	2,601	137,160.5	52.7
V.	*Laborers, no special trades*	1,173	54,891.5	46.8	14,102	628,693.0	44.6
VI.	*Agents, laborers abroad, etc.*	300	13,989.0	46.6	3,158	139,911.0	44.3
VII.	*Seafaring men*	57	2,601.5	45.6	991	42,451.5	42.8
VIII.	*Soldiers*	11	639.5	58.1	118	6,686.0	56.7
IX.	*Business men*	477	24,041.5	50.4	6,231	300,723.5	48.2
X.	*Professional men*	153	8,088.5	52.9	2,671	137,189.5	51.4
XI.	*Unemployed*	933	54,985.5	58.9	8,670	489,101.0	56.4
XII.	*Females*	5,351	288,425.5	53.9	68,103	3,512,179.0	51.6
I.	*Cultivators of the earth*	2,444	155,097.0	63.5	37,384	2,244,058.5	60.0
	Farmers	2,391	151,440.5	63.3	36,839	2,214,181.0	60.1
	Farm laborers	3	165.5	55.2	140	5,301.0	37.8
	Fruit growers	2	137.0	68.5	19	1,133.5	59.7
	Gardeners	25	1,655 5	66.2	315	1,875.5	59.5
	Nurserymen	4	279.0	69.8	15	806.0	53.7
	Retired farmers	19	1,419.5	75.2	56	3,942.0	70.4
II.	*Active mechanics abroad*	294	17,791.0	60.5	4,278	230,188.5	53.8
	Brickmakers	2	114.0	57.0	44	2,487.5	56.5
	Carpenters and builders	206	12,578.0	61.1	3,098	165,630.0	53.5
	House movers	1	50.5	50.5	11	610.5	55.5
	Masons	60	3,645.0	60.8	815	43,899.0	53.9
	Millwrights	8	481.0	60.1	126	8,002.5	63.5
	Pavers				1	21.5	21.5
	Ship carpenters	7	3,965.0	56.6	82	4,443.0	54.2
	Stone cutters	10	526.0	52.6	101	5,094.0	50.4

Table 103.—CONTINUED.—*Occupations of decedents, etc.*

Class.	Occupations.	Year, 1892.			Twenty-two years, 1870-91.		
		Number of persons.	Age in years and tenths of a year.		Number of persons.	Age in years and tenths of a year.	
			Aggregate.	Average.		Aggregate.	Average.
III.	*Active mechanics in shops*	397	20,978.5	52.8	5,517	280,891.0	50.9
	Bakers	9	395.5	43.9	151	7,962.0	52.7
	Blacksmiths	69	3,896.5	56.5	967	54,382.5	56.2
	Boiler makers	7	309.5	44.2	46	2,113.5	50.3
	Book binders	2	56.0	28.0	15	751.5	50.1
	Bottlers	----	----	----	4	114.0	28.5
	Brewers	8	391.0	48.9	135	6,410.5	47.5
	Broom makers	----	----	----	15	764.5	51.0
	Cabinet makers	14	755.0	53.9	228	12,204.0	53.5
	Carriage makers	6	424.0	70.7	164	9,412.5	57.4
	Carriage trimmers	----	----	----	17	788.0	46.4
	Chair makers	2	121 0	60.5	6	263.0	43.8
	Confectioners	1	56.5	56.5	26	1.226.0	47.2
	Cooks	5	199.5	39.9	86	3,905.5	45.4
	Coopers	32	1,957.0	61.2	481	28,015.5	58.2
	Coppersmiths	1	74.5	74.5	11	639.0	58.1
	Dyers	----	----	----	19	957.5	50.4
	Finishers	2	59.0	29.5	46	1,605.5	35.0
	Foundrymen	2	137.0	68.5	20	920.0	46.0
	Gilders	----	----	----	8	260.0	32.5
	Glass blowers	----	----	----	10	368.0	36.8
	Gunsmiths	3	201.5	67.3	54	3,179.0	58.9
	Machinists	36	1,810.0	50.3	363	17,583.0	48.3
	Marble workers	4	205.0	50.3	55	2,716.5	49.4
	Mechanics	24	1,475.0	61.5	590	30,198.5	51.2
	Millers	29	1,716.5	59.2	362	20,142.0	55.6
	Model makers	4	231.0	57.8	25	1,222.5	48.9
	Molders	25	1,022.5	40.9	278	10,551.5	38.7
	Painters	51	2,312.5	45.3	686	30,229.0	44.1
	Plasterers	2	127.0	63.5	38	1,996.5	52.5
	Plumbers	7	450.5	35.7	59	2,363.0	40.1
	Potters	----	----	----	6	418.0	69.7
	Rope makers	----	----	----	6	357.0	59.5
	Sail makers	----	----	----	5	236.0	47.2
	Saw filers	2	113.0	56.5	7	336.5	48.1
	Saw makers	----	----	----	5	235.0	47.1

Table 90.—CONCLUDED.—*Causes of death—Alphabetical list.*

Sex.	Months, 1892.												Years, 1887-92.						Causes of death.	Ages in periods of years, 1892.																					
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	1892.	1891.	1890.	1889.	1888.	1887.		Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.
Females	...	1	...	...	1	...	1	1	...	...	...	...	...	4	6	2	8	7	8	Turn of life	...	...	...	...	...	...	...	1	2	...	1	...	...	...	...	...
Males	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	2	8	6	8	Ulcer	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Females	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	3	2	6	"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	160	140	168	146	147	137	138	194	180	158	161	170	16	1915	1768	1510	1234	1224	1249	Unknown *	1202	40	12	24	39	31	36	25	29	30	35	32	38	56	39	27	33	187
Males	88	85	92	69	82	77	86	118	103	87	84	93	9	1073	908	794	630	647	628	"	695	22	7	13	12	6	14	10	13	16	21	20	18	34	26	19	18	109
Females	62	55	76	72	65	58	50	76	76	71	71	74	7	813	774	704	604	577	616	"	503	18	5	11	27	25	22	15	16	14	14	12	20	22	13	8	15	53
Unknown	10	...	...	5	...	2	2	...	1	...	6	3	...	29	86	9	...	...	5	"	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	25
Total	...	1	1	1	2	...	1	3	...	1	1	...	...	11	12	5	4	4	3	Uræmia	...	...	...	...	2	2	...	...	...	1	...	1	...	1	2	...	1	1
Males	...	1	...	1	2	...	...	2	...	1	1	...	...	8	6	2	1	3	2	"	...	...	...	...	...	1	...	...	...	1	...	1	...	1	2	...	1	1
Females	...	...	1	...	...	...	1	1	...	...	...	...	...	3	6	3	3	1	1	"	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...
Males	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	Urethra, Stricture of	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
Males	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	3	1	Urinary organs, Dis. of	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Females	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	" " " "	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Females	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	Uterus, Abscess of	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Females	1	1	...	1	...	...	2	1	...	...	...	1	...	7	12	1	8	8	13	Uterus, Disease of	...	...	...	2	...	2	1	...	...	...	1	...	...	...	1	...	...	...
Females	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	1	1	Uterus, Hemorrhage of	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Females	1	...	...	1	...	...	...	...	...	...	1	...	...	3	5	...	2	8	7	Uterus, Inflammation of	...	...	...	...	...	1	...	1	1	...	...	...	...	...	...	...	...	...
Males	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	Vaccination	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Males	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	Venereal Disease	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Females	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	Vomiting	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

| | | |

Table 103.—CONTINUED.—*Occupations of decedents, etc.*

Class.	Occupations.	Year, 1892.			Twenty-two years, 1870-91.		
		Number of persons.	Age in years and tenths of a year.		Number of persons.	Age in years and tenths of a year.	
			Aggregate.	Average.		Aggregate.	Average.
	Agents, etc.—Continued.						
	Railroad laborers	2	62.0	31.0	170	7,337.0	43.2
	Railroad men	25	1,116.5	44.7	146	5,982.0	41.0
	Sextons	4	252.0	63.0	9	509.5	56.6
	Station agents	1	33.5	33.5	12	509.5	42.5
	Switchmen	1	23.5	23.5	37	1,245.5	33.7
	Teamsters	29	1,401.5	48.3	319	14,325.0	44.9
	Tollgate keepers	----	----	----	5	302.5	60.5
	Waiters	1	20.5	20.5	10	359.5	36.0
	Watchmen	10	642.0	64.2	43	2,358.5	54.8
	Whitewashers	----	----	----	11	721.5	65.6
VII.	*Seafaring men*	57	2,601.5	45.6	991	42,451.5	42.8
	Fishermen	12	593.0	49.4	160	7,529.5	47.1
	Officers	7	378.5	54.1	78	3,899.0	50.0
	Sailors	38	1,630.0	42.9	748	30,782.0	41.1
	United States navy	----	----	----	5	290.5	58.1
VIII.	*Soldiers*	11	639.5	58.1	118	6,686.0	56.7
	Officers	2	89.0	44.5	7	376.5	53.8
	Soldiers	9	550.5	61.2	111	6,309.5	56.8
IX.	*Business men*	477	24,041.5	50.4	6,231	300,723.5	48.2
	Auctioneers	1	54.5	54.5	9	517.0	57.4
	Bankers	5	272.5	54.5	128	7,593.0	59.3
	Bookkeepers	40	1,838.0	45.9	317	14,055.0	44.3
	Capitalists	19	1,400.5	73.7	122	8,015.0	65.7
	Clerks	67	2,500.5	37.3	939	31,992.0	34.1
	Commission merchants	2	121.0	60.5	28	1,616.0	57.7
	Contractors and jobbers	6	317.0	52.8	105	6,034.0	57.4
	Furniture dealers	1	43.5	43.5	14	742.0	53.0
	Grain buyers	3	173.5	57.7	26	1,311.0	50.4
	Grocers	15	769.5	51.3	280	13,695.0	48.9
	Hotel clerks	2	96.0	48.0	14	563.0	40.2
	Hotel keepers	25	1,330.5	53.2	376	19,832.0	52.7
	Insurance agents	8	453.0	56.6	100	5,431.5	54.3
	Justices of the peace	2	114.0	57.0	49	2,677.5	54.6
	Liquor dealers	4	191.0	47.8	26	1,189.0	45.7

Table 103.—CONTINUED.—*Occupations of decedents, etc.*

Class.	Occupations.	Year, 1892.			Twenty-two years, 1870-91.		
		Number of persons.	Age in years and tenths of a year.		Number of persons.	Age in years and tenths of a year.	
			Aggregate.	Average.		Aggregate.	Average.
	Business men.—Continued.						
	Liverymen	6	222.0	37.0	93	4,250.0	45.7
	Lumbermen	45	2,160.5	48.0	606	28,256.0	46.6
	Manufacturers	19	992.5	52.2	218	11,307.5	51.9
	Merchants	110	6,185.0	56.2	1,641	87,268.5	53.2
	Mill owners	----	----	----	9	505.5	56.2
	News agents	1	32.5	32.5	12	469.0	39.1
	Public officers	15	830.5	55.4	173	9,071.0	52.4
	Real estate dealers	11	661.5	60.1	129	7,826.0	60.7
	Restaurant keepers	1	68.5	68.5	30	1,496.0	49.9
	Salesmen	13	481.5	37.0	125	5,407.0	43.3
	Saloon keepers	34	1,476.0	43.4	546	24,165.0	44.3
	Undertakers	7	470.5	67.2	30	1,675.0	55.8
	All others	15	785.5	52.4	86	4,674.0	54.3
X.	*Professional men*	153	8,088.5	52.9	2,671	137,189.5	51.4
	Actors	1	52.5	52.5	14	580.0	41.4
	Architects	----	----	----	16	755.0	47.2
	Artists	1	29.5	29.5	44	1,879.0	42.7
	Attorneys at law	22	1,142.0	51.9	381	20,529.5	53.9
	Civil engineers	1	31.5	31.5	43	2,521.0	58.6
	Clergymen	21	1,377.5	65.6	457	29,279.0	64.1
	Dentists	1	58.5	58.5	70	3,235.0	46.2
	Draughtsmen	3	166.5	55.5	7	390.0	55.7
	Druggists	18	888.0	49.3	188	8,388.0	44.4
	Editors	2	118.0	59.0	58	2,665.5	46.0
	Electricians	6	176.0	29.3	6	173.0	28.8
	Judges	----	----	----	5	289.0	57.8
	Lecturers	----	----	----	2	100.0	50.0
	Musicians	3	188.5	62.8	73	3,360.5	46.0
	Opticians	----	----	----	7	280.0	40.0
	Photographers	2	123.0	61.5	37	1,441.0	38.9
	Physicians and surgeons	40	2,352.0	58.8	696	39,372.0	56.6
	Stenographers	1	22.5	22.5	7	240.0	34.3
	Students	7	167.5	23.9	115	2,732.5	23.8
	Surveyors	2	152.0	76.0	18	1,164.5	64.7
	Teachers	14	640 0	45.7	302	12,862.0	42.6

Table 103. CONTINUED.—*Occupations of decedents, etc.*

Class.	Occupations.	Year, 1892.			Twenty-two years, 1870-91.		
		Number of persons.	Age in years and tenths of a year.		Number of persons.	Age in years and tenths of a year.	
			Aggregate.	Average.		Aggregate.	Average.
X.	*Professional men.—Continued.*						
	Telegraphers	4	181.0	45.2	82	2,581.5	31.5
	Veterinary surgeons	4	222.0	55.5	43	2,421.5	56.3
XI.	*Unemployed*	933	54,985.5	58.9	8,670	489,101.0	56.4
	Paupers	22	1,451.0	66.0	350	20,522.5	58.6
	Pensioners				8	569.0	71.1
	Retired	37	2,818.5	76.2	177	14,062.0	79.4
	Tramps	2	79.0	39.5			
	Unemployed	250	14,849.0	59.2	2,911	173,335.5	59.5
	Unknown	621	35,747.5	57.6	5,187	278,940.0	53.8
	All others	1	40.5	40.5	37	1,672.0	45.2
XII.	*Females*	5,351	288,425.5	53.9	68,103	3,512,179.0	51.6
	Actresses				6	188.0	31.3
	Aeronaut	1	23.5	23.5			
	Agents	1	21.5	21.5	16	640.5	40.0
	Artists	2	43.0	21.5	21	759.5	36.2
	At home	98	5,262.0	53.7	415	13,215.0	31.8
	Bakers	1	27.5	27.5			
	Bankers				1	48.5	48.5
	Basket makers				14	698.0	49.8
	Boarding house keepers	4	220.0	55.0	32	1,786.5	55.8
	Bookkeepers	3	86.5	28.7	15	531.5	35.4
	Caterers	1	53.5	53.5			
	Cigarmakers				7	188.5	26.9
	Clerks	10	352.0	35.2	130	3,822.5	29.4
	Confectioners				6	259.0	43.2
	Cooks	6	317.0	52.8	62	2,476.8	39.9
	Domestics	125	4,866.5	38.9	1,446	35,690.5	24.7
	Dressmakers	36	1,297.0	36.0	462	15,767.0	34.1
	Druggists				3	154.5	51.5
	Factory employés	1	21.5	21.5	13	425.5	32.7
	Farmers	267	15,733.5	58.9	3,056	172,988.0	56.6
	Farmers' daughters	8	278.0	34.7	54	1,415.0	26.2
	Farmers' wives	212	11,915.0	56.2	1,220	66,731.0	54.7
	Hair dressers	1	27.5	27.5	20	697.5	34.9
	Hotel keepers	5	259.5	51.8	60	2,794.0	46.6

Table 103.—CONCLUDED.—*Occupations of decedents, etc.*

Class.	Occupations.	Year, 1892.			Twenty-two years, 1870-91.		
		Number of persons.	Age in years and tenths of a year.		Number of persons.	Age in years and tenths of a year.	
			Aggregate.	Average.		Aggregate.	Average.
XII.	*Females.—Continued.*						
	House keepers	860	48,024.0	55.8	14,450	785,873.5	54.4
	House wives	1,726	88,309.0	51.2	29,339	1,412,432.0	48.1
	House workers	158	8,796.0	55.6	1,470	67,178.5	45.7
	Laborers	19	1,106.5	63.5	302	14,661.5	48.5
	Laundresses	2	88.0	44.0	12	521.0	43.4
	Mail carriers	1	20.5	20.5	.....	.....	.....
	Manufacturers	.....	.....	.....	9	470.5	52.3
	Matrons	2	91.0	45.5	107	5,600.0	52.3
	Merchants	5	248.5	49.6	69	3,610.5	52.3
	Millers	.....	.....	.....	9	497.5	55.3
	Milliners	5	230.5	46.1	182	6,885.5	37.8
	Ministers	.....	.....	.....	5	290.5	58.1
	Miscellaneous	8	359.0	44.9	179	8,408.5	47.0
	Musicians	1	24.5	24.5	27	912.0	33.8
	Music teachers	3	86.5	28.7	9	311.0	34.6
	Nurses	4	120.0	30.0	129	7,351.5	57.0
	Paupers	8	596.0	74.5	152	9,014.0	59.3
	Physicians	.....	.....	.....	40	2,288.0	57.2
	Printers' employés	.....	.....	.....	4	123.0	30.8
	Prostitutes	.....	.....	.....	27	727.0	26.9
	Public officers	2	116.0	58.0	1	57.5	57.5
	Railroad employés	.....	.....	.....	2	98.0	49.0
	Saloon keepers	.....	.....	.....	11	543.0	49.4
	Seamstresses	14	581.0	41.5	286	11,462.0	40.1
	Spinsters	.....	.....	.....	11	628.5	57.1
	Stenographers	2	51.0	25.5	6	166.5	27.8
	Students	4	83.0	20.8	40	912.5	22.8
	Tailoresses	7	356.5	50.9	163	8,583.0	52.7
	Teachers	48	1,381.0	28.8	683	21,343.0	31.2
	Telegraphers	.....	.....	.....	10	264.5	26.5
	Typewriters	1	33.5	33.5	.....	.....	.....
	Unemployed	732	42,498.0	58.1	6,882	396,869.0	57.7
	Unknown	944	53,717.0	56.9	6,193	330,045.5	53.3
	Washer women	2	98.0	49.0	88	4,071.0	46.3
	Weavers	8	538.0	67.3	130	8,908.5	68.5
	Widows	1	67.5	67.5	17	1,216.5	71.6

PART V.—REGISTRATION OF VITAL STATISTICS IN THE CITIES OF MICHIGAN.

So far as known to the present compiler no attention has ever been given in previous registration reports of this State to the important subject of the registration of vital statistics in the cities of Michigan, considered apart from the general results shown by the counties of which they form a part. From this statement may be excepted the following paragraph from the "Introductory Remarks" of the last report (1891), in fulfillment of the promise contained wherein the present study of municipal registration in Michigan is presented:

"Lastly, a very important subject has not been entered upon in this report except to the extent of a preliminary table (Exhibit H), designed to suggest the importance of its study. No statements have ever been given in these reports of the births or deaths that occur in the cities of the State, except as the population of the cities is included in that of the various counties. The facts taken from the last census show that the urban population is increasing much faster in Michigan than the rural. The birth-rates and death-rates of our cities are probably markedly higher than that of the country surrounding them. It is time that some authentic information was given on this subject, and in the report for 1892, now in preparation, an effort will be made to present certain details of importance in regard to the vital statistics of the cities of Michigan."

The study of the deaths that occur in the cities of the State would be necessary were the present registration law more perfect. It is rendered of special interest at present from the fact that the registration returns under the State registration law very inadequately represent the actual mortality of the State, and the results of the local municipal registration of deaths, as pointed out on page 4 of the present report, give some valuable clues as to the actual death-rate of Michigan. There have never been presented in these reports any reliable tables showing the distribution of total deaths or deaths from particular diseases through the several months of the year. In the local reports issued by several of the cities of the State, we find such data, which, though covering only a limited area and an area possibly not representative of average conditions, are of great value in the absence of any other.

It was thought necessary in the study of the results of registration in cities to include more than the single year 1892, in order to supply a suitable background for comparison. The results for a single year are difficult of interpretation, unless data are at hand enabling comparisons to be made with other years. The three years 1890-92, inclusive,

were selected since the positive rates of births and deaths to enumerated populations would be available for 1890, and the addition of the years 1891 and 1892 would bring the data up to that for the State as a whole presented in this and the preceding registration reports. Birth-rates and death-rates for 1891 and 1892 are based upon the average annual increase of population as shown by comparison of the United States census of 1890 and the State census of 1894. The population of the State according to the State census of 1894 was 2,241,914 persons, a number slightly larger than the preliminary statement used on page 180. This number, indeed, will probably be increased somewhat when the result of the final count is known, but for all practical purposes the present statement is substantially correct. The order of discussion of the subjects treated in this portion of the report will be as follows:—

1.—Population of the cities of Michigan.

2.—Births and deaths in the cities of Michigan according to the State registration system, 1890-92.

3.—Local municipal registration:

(*a*) Provisions relating to registration in the charters of Michigan cities.

(*b*) City ordinances relating to registration.

(1) Forms of certificates of death in use in certain cities of Michigan.

(2) Forms of burial permits in use in certain cities of Michigan.

(*c*) Practical results of local registration in Detroit, Grand Rapids and other cities of the State.

A statement showing the contents of tables is appended:

Synopsis of tables relating to registration in cities.

Table.	Vital statistics of cities in Michigan, 1890-92.
104.	Population of the cities of Michigan according to the State censuses of 1884 and 1894 and the United States census of 1890.
105.	Births and deaths and birth-rates and death-rates of Michigan cities according to the returns under the State system of registration for each of the years 1890-92.
106.	Status of local municipal registration of vital statistics in Michigan, containing references to provisions of charters and ordinances relating to registration, officers acting as local registrars, and whether certificates of death and burial permits are required.
107.	Deaths registered from important diseases and groups of diseases in Detroit, by months, for each of the years 1890-92, inclusive.
108.	Deaths registered from important diseases and groups of diseases in Grand Rapids, by months, for each of the years 1890-92, inclusive.
109.	Comparative mortality in certain cities of the United States for the year 1892.

1. POPULATION OF THE CITIES OF MICHIGAN.

The following table, taken from the preliminary anouncement of the State census of 1894 and corrected for additional returns up to Sept. 18, 1894, by Mr. Robert L. Hewitt, in charge of the census compilation, shows the population of each city in the State according to the last three censuses. The word *city* refers merely to incorporation under the State law as such and not, necessarily, to places of considerable size and density of population. In three instances the populations of "cities" included in this list are below 1,000 persons; in many cases the number of inhabitants is less than 4,000, the usually accepted minimum for a city population.

Table 104.—*Population of cities of Michigan according to the State censuses of 1884 and 1894 and the United States census of 1890.*

Cities.	1894.	1890.	1884.	Cities.	1894.	1890.	1884.
All cities	821,107	711,263	509,277	Iron Mountain	7,640	8,599	.....
				Ironwood	9,329	7,745	.....
Adrian	9,511	8,756	9,319	Ishpeming	11,689	11,197	6,840
Albion	4,845	3,763	.....	Jackson	22,627	20,798	19,100
Alpena	12,139	11,283	9,196	Kalamazoo	21,058	17,853	13,909
Ann Arbor	11,071	9,431	7,912	Lansing	15,834	13,102	9,774
Au Sable	2,661	4,328	.....	Lapeer	2,953	2,753	2,894
Battle Creek	15,528	13,197	10,051	Ludington	8,244	7,517	5,431
Bay City	30,043	27,839	29,412	Manistee	13,452	12,812	10,367
Belding	3,007	.....	.....	Marine City	3,486	3,268	.....
Bessemer	2,529	2,566	.....	Marquette	9,724	9,093	5,690
Big Rapids	5,203	5,303	5,902	Marshall	4,599	3,968	4,079
Benton Harbor	5,315	.....	.....	Mason	1,761	1,875	1,884
Cadillac	5,105	4,461	3,907	Menominee	12,536	10,630	5,577
Charlotte	4,351	3,867	3,595	Midland	2,485	2,277	.....
Cheboygan	6,956	6,235	.....	Monroe	5,614	5,258	5,281
Clare	1,392	.....	.....	Mt. Clemens	5,647	4,748	3,825
Coldwater	5,285	5,247	5,099	Mt. Pleasant	3,179	2,701	.....
Corunna	1,551	1,382	1,451	Muskegon	20,229	22,702	17,825
Detroit	287,835	205,876	132,956	Negaunee	5,940	6,078	4,110
Dowagiac	3,532	2,806	2,849	Niles	4,508	4,197	4,606
Eaton Rapids	2,157	1,970	2,129	North Muskegon	912	.....	.....
Escanaba	8,124	6,808	4,335	Norway	3,588	.....	.....
Flint	10,422	9,803	9,017	Owosso	8,274	6,564	3,868
Gladstone	2,130	1,337	.....	Pontiac	7,276	6,200	5,847
Gladwin	833	.....	.....	Port Huron	18,147	*a* 16,375	10,388
Grand Haven	5,268	5,023	5,903	Saginaw	44,641	46,322	*b* 42,845
Grand Ledge	2,218	1,606	.....	Sault Ste. Marie	7,246	5,760	.....
Grand Rapids	79,434	60,278	41,898	St. Clair	2,576	2,353	2,031
Greenville	3,113	3,056	3,063	St. Ignace	2,071	2,704	2,236
Harrison	746	.....	.....	St. Joseph	4,519	.....	.....
Hastings	3,015	2,972	2,632	St. Louis	2,204	.....	.....
Hillsdale	4,121	3,915	3,549	Stanton	1,303	1,352	1,721
Holland	6,307	3,945	2,972	West Bay City	12,337	12,981	9,490
Hudson	2,346	.....	.....	Wyandotte	4,209	3,817	3,570
Ionia	5,021	4,482	4,641	Ypsilanti	6,111	6,129	5,301

a Includes population of Fort Gratiot, 2,832, consolidated with Port Huron in 1893.
b Includes population of East Saginaw, consolidated with Saginaw in 1890.

In connection with this table the following statements in regard to the numbers of incorporated cities and the percentages of population contained in them to the total population of the State as recorded by different censuses will be of interest. The increased proportion of the population residing in cities is by no means peculiar to Michigan, but is simply an illustration of the general tendency of the population of this country in recent years. According to a table given in the Compendium of the Eleventh United States Census (1890), the percentages of city population were as follows for recent census years in the United States: 1860, 16.13; 1870, 20.93; 1880, 22.57; 1890, 29.30. It thus appears that the tendency to urban preponderance has been greater in Michigan than the average of the entire country, and it is significant that the high percentage of gain in the city population of the State from 1880 to 1890 is maintained from 1884 to 1894.

Cities of Michigan—Increase in numbers and percentage to total population, 1864–94.

Year of census.	Number of incorporated cities.	Per cent of total population.
1864	19	16
1870	29	19
1874	38	24
1880	43	24
1884	49	27
1890	61	34
1894	70	37

"The 61 cities in the State in 1890 show an increase of 84,848, or 11.93 per cent. The increase outside of these cities was 60,637, or 4.39 per cent.

"The 49 cities in the State in 1884 show an increase of 232,130, or 45.58 per cent. The increase outside of these cities is 155,212, or 11.55 per cent. In other words since 1884 the rate of increase of population in the 49 cities has been about four times the rate of increase in the balance of the State."

There were 38 cities and one village in Michigan in 1890 with populations over 4,000. These 39 cities and villages showed a gain in population from 1880 to 1890 of 70.09 per cent, while the State at large gained only 27.92 per cent and the country population (exclusive of cities and villages of 4,000 inhabitants) gained only 15.17 per cent.

2. BIRTHS AND DEATHS IN THE CITIES OF MICHIGAN AS RETURNED UNDER THE STATE SYSTEM OF REGISTRATION, 1890-92.

Table 105 presents the results of the State system of enumeration of births and deaths for each city of the State for three years, 1890–92. The numbers of births and deaths returned for certain cities are seen to vary widely in different years, probably on account of greater or less thoroughness in making the enumeration. For the city of Detroit, however, the element of fraud largely enters, as explained on a previous page of this report (p. 8), and the results given for that city are not only worthless in themselves but vitiate the rates for the cities as a whole and for the State. For this reason the city of Detroit is eliminated from the following comparison of city and country birth-rates and death-rates, and the rates given for the cities of the State *exclusive of Detroit* are more reliable than those given for all cities in Table 105.

Comparison of the city and country birth-rates and death-rates in Michigan, as returned, 1890-92.

City and country.	Births per 1,000 population.			Deaths per 1,000 population.		
	1892.	1891.	1890.	1892.	1891.	1890.
State	21.8	23.8	25.0	10.0	10.4	10.8
Cities exclusive of Detroit	24.8	21.4	23.3	12.7	11.9	11.1
Country	18.0	19.6	17.6	8.3	8.4	8.1

Both the birth-rates and death-rates of the urban population are seen to be higher than those of the rural population of the State, but it is probable that the difference is slightly exaggerated in the above comparison owing to the fact that registration is somewhat more accurate on the whole in the cities. In some cities it is evident that the results of immediate local registration have been used in making the returns, and in such cases many deaths are included that would have been overlooked if the periodical enumeration had been depended upon alone. *The fact that one city shows a higher degree of mortality than another in Table 105 must not be taken as conclusive evidence that more unsanitary conditions exist until the relative accuracy of the enumeration of deaths is determined.* These statistics ought, it is true, to be a reliable guide in ascertaining the comparative healthfulness of different portions of the State and of its various cities, but the percentage of omissions is so large and so irregularly distributed under the present imperfect law that very few definite statements of value can be made in regard thereto.

It should be understood that the frauds in the returns of births and deaths from the city of Detroit referred to above are found in the returns made by appointees of the Common Council to the County Clerk under the State registration law, and do not apply in any respect to the system of immediate registration of births and deaths in that city conducted by the city board of health. Indeed, the results of the latter system are very important as evidence of the falsity of the enumerators' returns, which largely exceed them, contrary to what would naturally be the case. On a following page the results of the immediate registration of deaths in Detroit and certain other cities are presented, and direct comparisons may be made with those given for the same cities in Table 105.

3. LOCAL MUNICIPAL REGISTRATION OF DEATHS IN MICHIGAN.

The registration of vital statistics in the cities of Michigan, as provided for by local regulations, is concerned chiefly with the recording of deaths; six cities, however, Detroit, Gladstone, Grand Rapids, Menominee, Muskegon and Port Huron, have clauses in their charters authorizing the registration of births, and those of two cities, Detroit and Muskegon, provide further for the return of marriages. This latter provision is of little practical importance, for the State law regulating the registration of marriages is perfectly satisfactory in its results. The registration of births began in Detroit in 1893, nearly a year later than the last year studied in this report, so that the results of registration of births under local regulations are practically confined to the single city of Grand Rapids.

Table 105.—*Births and deaths returned by the State enumeration from the cities of Michigan for the years 1890–92, inclusive; with rates per 1,000 estimated population for each of these years.*

Cities.	Births enumerated.			Deaths enumerated.			Birth-rates per 1,000 population.			Death-rates per 1,000 population.		
	1892.	1891.	1890.	1892.	1891.	1890.	1892.	1891.	1890.	1892.	1891.	1890.
All cities	21,029	23,533	23,014	10,006	10,856	10,496	27.4	31.9	39.4	13.1	14.0	14.8
Adrian	153	155	138	100	106	98	16.8	17.3	15.8	10.9	11.9	11.2
Albion	68	45	40	35	37	36	14.6	11.2	10.6	8.1	9.2	9.6
Alpena	343	286	235	137	123	94	29.3	24.9	20.8	11.7	10.7	8.3
Ann Arbor	140	114	132	113	125	91	13.7	11.6	14.0	11.0	12.7	9.6
Au Sable	83	96	69	32	35	30	23.7	24.5	15.9	9.2	8.9	6.9
Battle Creek	232	75	143	105	103	70	16.2	5.4	10.3	7.3	7.5	5.3
Bay City	780	887	864	274	304	302	27.0	29.5	31.0	9.5	10.7	10.8
Belding*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bessemer	95	60	67	37	22	21	37.3	23.5	26.1	14.5	8.6	8.2
Big Rapids	105	98	88	39	51	45	20.0	17.6	16.6	7.4	9.7	8.5
Benton Harbor	60	41	.....	28	42	.....	.....	.....	.....	.....	.....	.....
Cadillac	102	151	95	27	28	20	21.3	32.7	21.3	5.6	6.1	4.5
Charlotte	13	53	39	19	58	49	3.2	13.3	10.1	4.6	14.5	12.7
Cheboygan	145	134	160	40	57	39	22.0	20.9	25.7	6.1	8.9	6.3
Clare*	33	20	.....	9	13	.....	.....	.....	.....	.....	.....	.....
Coldwater	72	79	83	92	68	91	13.7	15.0	15.8	17.5	12.9	17.3
Corunna	12	10	7	8	6	10	8.2	7.0	5.1	5.5	4.2	7.2
Detroit	7,824	12,305	16,225	3,139	4,092	4,910	35.2	57.5	78.8	14.2	19.1	23.8
Dowagiac	21	53	62	9	10	33	6.6	17.7	22.1	2.8	3.3	11.8
Eaton Rapids	34	35	51	33	27	22	16.5	17.4	25.9	16.0	13.4	11.2
Escanaba	267	192	296	79	120	95	35.8	26.9	43.5	10.6	16.8	14.0
Flint	140	150	116	121	90	106	13.8	15.1	11.3	12.0	9.0	10.8
Fort Gratiot†	.....	*70*	*45*	.....	*23*	*13*	.....	.....	*11.7*	.....	.....	*3.4*
Gladstone	50	9	28	14	4	9	28.8	5.9	20.9	8.1	2.6	6.7
Gladwin*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand Haven	118	145	142	92	86	74	22.0	28.5	28.3	17.9	16.9	14.7
Grand Ledge*	.....	.....	.....	32	.....	.....	.....	.....	.....	.....	.....	.....
Grand Rapids	1,800	1,710	1,744	947	854	962	25.8	26.3	28.9	13.6	13.1	16.0
Greenville	32	19	34	16	13	22	10.4	6.2	11.1	5.2	4.2	7.2
Harrison*	9	6	.....	6	6	.....	.....	.....	.....	.....	.....	.....
Hastings	40	39	42	32	39	23	13.4	13.1	14.1	10.7	13.1	7.7
Hillsdale	17	22	31	42	42	45	4.2	5.5	7.9	10.5	10.6	11.5
Holland	160	130	126	51	52	79	31.2	28.7	31.9	9.9	11.5	20.0
Hudson*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ionia	81	62	48	56	35	22	17.0	13.4	10.7	11.8	7.6	4.9

Table 105.—CONCLUDED.—*Births and deaths in cities, 1890-92.*

Cities.	Births enumerated.			Deaths enumerated.			Birth-rates per 1,000 population.			Death-rates per 1,000 population.		
	1892.	1891.	1890.	1892.	1891.	1890.	1892.	1891.	1890.	1892.	1891.	1890.
Iron Mountain	365	185	356	90	119	113	45.0	22.1	41.4	11.1	14.2	13.1
Ironwood	485	375	104	379	183	40	56.8	46.1	13.4	44.4	22.5	5.2
Ishpeming	480	385	413	112	240	210	37.6	34.0	36.9	9.8	21.2	18.8
Jackson	290	300	282	282	204	249	13.4	14.1	13.6	13.0	9.6	12.0
Kalamazoo	400	386	341	209	215	227	20.6	20.7	19.1	10.7	11.5	12.7
Lansing	375	258	308	216	178	169	25.9	18.7	23.5	14.9	12.9	12.9
Lapeer	12	35	15	34	22	15	4.2	12.5	5.4	11.9	7.8	5.4
Ludington	230	242	210	91	91	70	29.2	31.4	27.9	11.5	11.8	9.3
Manistee	407	400	440	111	195	176	31.0	30.8	34.3	8.5	15.0	13.7
Marine City	90	105	95	58	80	33	26.7	31.6	29.1	15.7	9.0	10.1
Marquette	305	158	142	134	91	51	32.4	17.1	15.6	14.2	9.8	5.6
Marshall	65	64	45	37	31	54	15.2	15.5	11.3	8.6	7.5	13.6
Mason	30	25	21	31	33	32	16.5	13.5	11.2	17.1	17.9	17.1
Menominee	457	320	357	101	76	86	39.5	28.8	33.6	8.7	6.8	8.1
Midland	35	38	34	24	13	20	14.7	16.3	14.9	10.1	5.6	8.8
Monroe	62	81	90	59	59	57	11.4	15.1	17.1	10.9	11.0	10.8
Mt. Clemens	113	88	74	47	53	40	21.7	17.7	15.6	9.0	10.7	8.4
Mt. Pleasant	56	51	55	18	23	32	19.0	18.1	20.4	6.1	8.2	11.8
Muskegon	600	668	720	280	270	304	28 0	30.9	31.7	13.0	12.2	13.4
Negaunee	355	315	258	134	131	96	59.1	52.1	42.4	22.3	21.7	15.8
Niles	52	57	73	98	55	90	11.9	13.3	17.4	22.5	12.9	21.4
North Muskegon*	34	35	.....	25	21	.....	.....	.....	.....	.....	.....	.....
Norway	138	152	.....	71	66	.....	.....	.....	.....	.....	.....	.....
Owosso	127	122	105	54	45	58	17.1	17.4	16.0	7.3	6.4	8.8
Pontiac	70	52	62	185	122	99	10.4	8.0	10.0	20.0	18.9	16.0
Port Huron†	395	421	361	283	212	178	22.9	25.0	22.0	13.5	12.6	10.9
Saginaw	1,150	1,080	1,193	766	596	304	25.3	23.5	25.8	16.8	13.0	6.6
Sault Ste. Marie	152	150	128	61	57	40	23.4	24.5	22.2	9.4	9.3	6.9
St. Clair	43	56	65	33	28	25	17.4	23.2	27.6	13.4	11.6	10.6
St. Ignace	45	2	34	10	.....	7	18.8	.8	12.6	4.2	.....	2.6
St. Joseph*	70	34	.....	25	12	.....	.....	.....	.....	.....	.....	.....
St. Louis*	26	13	.....	10	15	.....	.....	.....	.....	.....	.....	.....
Stanton	23	13	16	15	9	10	17.3	9.7	11.8	11.3	6.7	7.4
West Bay City	387	556	352	161	106	102	29.0	43.4	27.1	12.7	8.3	7.9
Wyandotte	111	140	125	51	55	61	27.7	35.8	32.7	12.7	14.0	16.0
Ypsilanti	45	30	35	52	52	50	7.4	4.9	5.7	8.5	8.5	8.2

* Rates are based upon censuses of 1890 and 1894; cities incorporated between these years have no populations stated for 1890 in Table 104, and no estimates of population or vital rates are given in these cases.

† Fort Gratiot was consolidated with Port Huron in 1893. The births and deaths returned from Fort Gratiot for 1890 and 1891 are stated in *italics*, and are also included in the figures given for Port Huron for these years.

The status of the registration of deaths under the local regulations of the cities of the State may be conveniently examined in Table 106. This table contains references to the charter provisions of each city that bear directly and indirectly upon the registration of deaths, and also cites the city ordinances, as far as accessible, that have been framed for the purpose of carrying into practical effect the powers conferred upon the cities of the State by their charters for this purpose. The officer acting as city registrar is stated, if known, or the statement is made, if definitely authorized by the local correspondent, that such duty is not performed. In certain cases, all of cities having less than 4,000 inhabitants, from which no information could be obtained, the statements are made, subject to correction as indicated by the "?", that there are no local registrars. Statements are also given as to the requirement of burial permits and certificates of death, and lastly the names and official positions of the local authorities, to whom this Department is indebted for much of the information herein contained, are given, and the opportunity is taken to acknowledge the courteous and prompt responses that were received from them in nearly every instance.

Examination of Table 106 shows that all of the cities in the State, with two exceptions, Charlotte and Ypsilanti, have charter provisions directly or indirectly referring to or authorizing the registration of deaths. Such provisions are usually found in those portions of the charters defining the general powers of the city council or relating directly to the control of cemeteries. In some instances this power is associated with the functions of the local board of health. Below may be found a classified list of cities in which the specific language employed in the charters is stated, and which is arranged in two groups according to the source of the provisions as indicated above.

Although sixty-eight of the seventy cities of the State are enabled under specific charter provisions to enact ordinances for the registration of deaths, only twenty-three, so far as could be ascertained, have done so. These cities are as follows: Battle Creek, Bay City, Big Rapids, Benton Harbor, Detroit, Grand Haven, Grand Rapids, Hillsdale, Holland, Iron Mountain,* Ironwood, Jackson, Kalamazoo, Lansing, Ludington, Manistee, Marshall, Mason, Menominee, Muskegon, Saginaw, Sault Ste. Marie and West Bay City. To this list should probably be added Flint, Marquette and Port Huron, copies of whose ordinances could not be obtained, but which have local registrars and require burial permits and certificates of death; also the city of Ann Arbor, whose ordinances were in course of compilation at the time of this inquiry, but which evidently has a system of registration in force, and possibly also the city of Eaton Rapids, whose clerk wrote that such an ordinance was on its first reading (November 10, 1893). No reports were received from twenty-two cities, mostly of small size, and from twenty cities definite statements were received that no ordinance of this character had ever been enacted.

The official positions of the local registrars in the twenty-six cities in which such officers were ascertained to exist, were as follows: Health officers or secretary of local board of health, 10; city clerks or recorders, 8; sextons, clerks of cemetery boards or other officers connected with the management of cemeteries, 8. In twenty-one cases it was stated that no local record of deaths was kept, and in twenty-one cases no reports were received, but from the size of these cities, recent incorporation, etc., it is probable that most of these have no form of registration.

* The city clerk stated on Feb. 17, 1894, that an ordinance would in all probability be passed by the council at its next meeting.

Table 106.—*Status of local municipal registration of vital statistics in Michigan in 1893, with references to the provisions of city charters and ordinances relating to the control of cemeteries and the interment of the dead.*

City.	County.	Year incorporated.	Population 1894.	Provisions relating to registration of deaths.*		Local registrar.	Burial permits.	Certificates of death.	Authority.
				Charters.	Ordinances.				
Adrian	Lenawee	1853	9,511	L. A. No. 384 of 1887, sec. 165	None	None	None	None	Mr. John Mawdsley, city clerk.
Albion	Calhoun	1885	4,845	L. A. No. 296 of 1885, sec. 24, *20th*	No report	None (?)			
Alpena	Alpena	1871	12,139	L. A. No. 393 of 1891, sec. 9, *24th*	None	None	None	None	Dr. A. Wilkinson, city physician.
Ann Arbor	Washtenaw	1851	11,071	L. A. No. 331 of 1889, sec. 88, *20th*, *23d*; sec. 114	June 11, 1888	Health officer	Required	Required	Mr. Wm. J. Miller, city clerk.
Au Sable	Iosco	1889	2,661	L. A. No. 457 of 1889, sec. 3 (General Law)	No report	None (?)			
Battle Creek	Calhoun	1859	15,523	L. A. No. 428 of 1887, *20th*	*Vital Statistics*, July, 1885	Clerks of cemeteries	For removal	None (?)	City clerk.
Bay City	Bay	1865	30,043	L. A. No. 323 of 1891, sec 10, *23d*, *38th*	*To Regulate Burial*, p. 270.	Health officer	Required	Required	City clerk
Belding	Ionia	1893	3,007	L. A. No. 313 of 1893, chap. 10, sec. 1, *31st*	None	None	None	None	Mr. W. Wilkinton, deputy city clerk.
Bessemer	Gogebic	1889	2,529	L. A. No. 364 of 1889, sec. 4 (General Law)	No report	None (?)			
Big Rapids	Mecosta	1889	5,203	L. A. No. 293 of 1889, sec. 8, *31st*	No. 15, New Series, *Cemeteries*, sec. 11, Feb., 1888	Supt. cemeteries	None	None	Mr. John T. Clark, city recorder.
Bent. Harbor	Berrien	1891	5,315	L. A. No. 347 of 1891, sec. 6 (General Law)	*Board of Health Regulations*, I, sec. iii, 4th; II, sec. 5, rule 28	Health officer	Required	Required	City clerk.
Cadillac	Wexford	1877	5,105	L. A. No. 332 of 1889, sec. 10 (General Law)	None	None	None	None	Mr. A. J. Teed, supt. of cemetery.
Charlotte	Eaton	1871	4,351	None	None	None	None	None	Mr. James A. Greenman, city recorder.
Cheboygan	Cheboygan	1889	6,356	L. A. No. 333 of 1889, sec's 1, 6, 8	No report	None (?)			
Clare	Clare	1891	1,392	L. A. No. 210 of 1891, sec. 81, *25th*	No report	None (?)			
Coldwater	Branch	1861	5,285	S. L. No. 250 of 1873, sec. 9	None	None	None	None	Mr. H. A. Close, city clerk.
Corunna	Shiawassee	1869	1,551	S. L. No. 265 of 1869, chap. v, sec. 2, *19th*	None	None	None	None	Mr. Hugh Nichols, city clerk.
Detroit	Wayne	1806	237,835	L.A. No. 326 of 1883, chap 7, sec. 53 L. A. No. 403 of 1893, sec's 5, 7†, 8	*Board of Health*, chap. 65, sec. 12, amend. July, 1890	Health commissioner	Required	Required	Dr. Duncan McLeod, health c'missioner.
Dowagiac	Cass	1877	3,532	L. A. No. 295 of 1893, chap. iv, sec. 18, *20th*, *23d*; chap. x, sec's 4, 6	None	None	None	None	Mr. Arthur E. Rudolphi, city rec'der.
Eat'n Rapids	Eaton	1881	2,157	L. A. No. 287 of 1893, sec. 14, *20th*, *40th*	In preparation	None	None	None	Mr. John J. Milburn, city recorder.
Escanaba	Delta	1883	8,124	L. A. No. 241 of 1891, chap. viii, *18th*, *21st*; chap. 14, sec's 6, 8	None	None	None	None	City clerk.

Flint	Genesee	1855	10,422	L. A. No. 321 of 1883, sec. 9, *22d*	No copy	City clerk	Required	Required	Dr. Geo. W. Holland, health officer.
Fort Gratiot	St. Clair	1889		Consolidated with Port Huron in 1893					
Gladstone	Delta	1889	2,130	L. A. No. 321 of 1893, chap. xi, sec. 1, *87th*†; chap. 14, sec's 1, 6, 8	No report	None (?)			
Gladwin	Gladwin	1893	883	L. A. No. 245 of 1893, sec. 3 (General Law)	No report	None (?)			
Grand Haven	Ottawa	1867	5,268	S. L. No. 352 of 1867, sec. 15	*Cemeteries*, p. 107, Oct., 1873	City sexton	None	None	Mr. Wm. N. Angel, city recorder.
Grand Ledge	Eaton	1893	2,218	L. A. No. 322 of 1893, chap. xiv, sec's 1, 6, 8	No report	None (?)			
Gd. Rapids	Kent	1850	79,434	L. A. No. 270 of 1891, title iii, sec. 10, *19th*†, *22d*, *42d*	*Cemeteries*, sec. 12, amend. Jan., 1877; sec's 1, 2, Aug. 1890. *Births*, Oct., 1891	Health officer	Required	Required	Dr. W. A. Wilson, sec'y city b'd health.
Greenville	Montcalm	1871	3,113	L. A. No. 395 of 1887, sec. 58, *25th*	None	None	None	None	Mr. D. S. Seaman, city clerk.
Harrison	Clare	1891	746	L. A. No. 319 of 1891, sec. 4 (General Law)	No report	None (?)			
Hastings	Barry	1871	3,015	L. A. No. 351 of 1891, sec. 14, *20th*, *38th*	None	None	None	None	Mr. E. G. Holbrook, city recorder.
Hillsdale	Hillsdale	1869	4,121	S. L. No. 257 of 1869, sec. 57, *25th*	*Vital Statistics*, Nov., 1883	City clerk	Required	Required	City clerk.
Holland	Ottawa	1867	6,307	L. A. No. 271 of 1893, title xi, sec's 1, 6, 9	*Board of Health*, p. 49, sec's 8, 9, Dec., 1886	None (?)	None	None	Mr. George H. Sipp, city clerk.
Hudson	Lanawee	1893	2,346	L. A. No. 223 of 1893, sec. 3 (General Law)	No report	None (?)			
Ionia	Ionia	1873	5,021	L. A. No. 410 of 1889, sec. 57, *19th*, *22d*	None	None	None	None	Mr. Fred Cutler, Jr., city clerk.
Iron Mount'n	Menominee	1888	7,640	L. A. No. 294 of 1889, sec. 1 (General Law)	*Births*, March 5, 1894†	None	None	None	Mr. R. Th. Miller, city clerk.
Ironwood	Gogebic	1889	9,329	L. A. No. 235 of 1893, chap. ix, sec. 2, *19th*; chap. xii, sec's 1, 6, 8	No. 46, *Vital Statistics*, Oct., 1893; No. 47, *Cemeteries*, sec's 12, 13, Oct. '93	City clerk	Required	Required	Mr. John Evans, city clerk.
Ishpeming	Marquette	1873	11,689	L. A. No. 251 of 1891, sec. 27, *20th*; chap. xv, sec's. 1, 6, 8	None	Sec'y cemetery	In use	(?)	City clerk.
Jackson	Jackson	1857	22,627	L. A. No. 414 of 1889, chap. xiii, sec's. 1, 6, 8	*Cemeteries*, p. 47, sec's 12, 14	Health officer	Required	Required	Health officer.
Kalamazoo	Kalamazoo	1883	21,058	L. A. No. 353 of 1889, chap. xvii, sec. 24, *20th*, *38th*	No. 53, July, 1887	Health officer	Required	Required	Mr. Chauncey Strong, city clerk.
Lansing	Ingham	1859	15,864	L. A. No. 405 of 1893, title viii, sec's. 1, 7, 9	*Cemeteries*, Apr., '78; *Vital Statistics*, Dec., 1879, and Jan., 1880	City clerk	Required	Required	Mr. Wm. C. Hinman, city clerk.
Lapeer	Lapeer	1869	2,953	L. A. No. 301 of 1875, chap. xiii, sec's 6, 8	No report	None (?)			
Ludington	Mason	1873	8,244	L. A. No. 320 of 1875, sec. 9, *22d*	No 72, *Cemetery*, May, 1890	Sec'y cemetery b'd.	Required	None	Mr. Joseph Lohner, city recorder.
Manistee	Manistee	1869	13,452	L. A. No. 48 of 1882, chap. xv, sec's 1, 6, 8	*Board of Health Regulation*, sec. 4, Feb., 1883	City clerk	Required	Required	Mr. Fred Lindblom, city clerk.
Marine City	St. Clair	1887	3,486	L. A. No. 344 of 1889, sec. 3 (General Law)	No report	None (?)			
Marquette	Marquette	1871	9,724	L. A. No. 323 of 1893, chap. vii, sec. 1, *19th*; chap. ix, sec. 3	No copy	City recorder	Required	Required	City recorder.
Marshall	Calhoun	1859	4,599	L. A. No. 405 of 1887, chap. xviii, sec. 11, *36th*; chap. xix, sec's 1, 5, 7	No. 26, *Cemeteries*, sec's 6, 8, Sept., 1890	City recorder	Required	None	City recorder.
Mason	Ingham	1875	1,761	L. A. No. 272 of 1891, sec. 15 (General Law)	No's 12, 15, *Cemeteries*, Mar., 1878 and July, 1884	City clerk	None	None	City clerk.

Table 106.—CONCLUDED.—*Status of local municipal registration of vital statistics in Michigan in 1893.*

City.	County.	Year incorporated.	Population 1894.	Provisions relating to registration of deaths.*		Local registrar.	Burial permits.	Certificates of death.	Authority.
				Charters.	Ordinances.				
Menominee	Menominee	1883	12,536	L. A. No. 281 of 1891, chap. xi, sec. 1, *97th*†; chap. xiv, sec. 16, c. 17, 20; chap. xv, sec's 1, 6, 9	*Health Ord.*, July 24, 1893	Health officer	Required	Required	Dr. H. L. Rosenberg, health officer.
Midland	Midland	1887	2,485	L. A. No. 332 of 1893, sec. 9	No report	None (?)			
Monroe	Monroe	1837	5,614	L. A No. 1 of 1874, sec. 1 (General Law)	None	None	None	None	City clerk.
Mt. Clemens	Macomb	1879	5,647	L. A. No. 308 of 1879, sec. 3 (General Law)	None	None	None	None	Mr. A. E. Van Eps, city clerk.
Mt. Pleasant	Isabella	1889	3,179	L. A. No. 264 of 1891, chap. xiii, sec's 1, 3	No report	None (?)			
Muskegon	Muskegon	1869	20,229	L. A. No. 304 of 1889, title vi, sec. 22, *28th*, *53d*†; title xviii, sec's 45, 46, 48, 49, 51	*Cemeteries*, p. 40, Dec., 1881; *Cemeteries*, p. 118, Dec., 1889	Sec'y H'd of H.	Required	Required	City clerk.
Negaunee	Marquette	1873	5,940	L. A No. 255 of 1891, chap. v, sec. 2, *19th*	None	None	None	None	Mr. Geo. A. McDonald, city recorder.
Niles	Berrien	1859	4,508	S. L. No. 353 of 1867, sec. 12	No report	None (?)			
N. Muskegon	Muskegon	1891	912	L.A. No. 215 of 1891, chap. vi, sec. 3, *42d*	No report	None (?)			
Norway	Dickinson	1891	3,588	L. A. No. 289 of 1891, sec. 19 (General Law)	No report	None (?)			
Owosso	Shiawassee	1859	8,274	S. L. No. 215 of 1859, sec. 45, *20th*, *24th*; sec. 53	None	None	None	None	Dr. C. A. Osborn, health officer.
Pontiac	Oakland	1861	7,276	S. L. No. 192 of 1861, sec. 45, *19th*, *23d*; sec. 53; L. A. No. 371 of 1885, sec's 51, 52, 190	No report	None (?)			
Port Huron	St. Clair	1857	18,147	L. A. No. 390 of 1885, chap. xii, sec's 1, 6, 8; L. A. No. 287 of 1877, chap. 10, sec. 35†	No copy	Supt. cemeteries	Required	Required	City clerk.
Saginaw	Saginaw	1857	44,641	L. A. No. 455 of 1889, title iii, sec. 8, *18th*, *21st*; sec. 12; title iv, sec. 4	*Cemeteries*, p. 200, sec. 11, Mar., 1891	Sextons of cemeteries	None	Required	City clerk.
S'lt S. Marie	Chippewa	1887	7,246	L. A. No. 533 of 1887, chap. ix, sec. 1, *34th*; chap. xiii, sec's 1, 4, 8	No. 10, *Cemeteries*, sec. 7, July, 1888	Comm'r of cemeteries	Required	Required	Mr. John W. Shine, city attorney.
St. Clair	St. Clair	1858	2,576	S. L. No. 142 of 1863, sec. 47, *20th*, *23d*	No report	None (?)			
St. Ignace	Mackinac	1883	2,071	L. A. No. 223 of 1883, chap. xiv, sec's 1, 6, 8	None	None	None	None	Mr. A. J. Gennell, city clerk.
St. Joseph	Berrien	1891	4,519	L. A. No. 348 of 1891, sec. 6 (General Law)	In preparation	None	None	None	Mr. Frank L. Napier city clerk.

St. Louis	Gratiot	1891	2,204	L. A. No. 211 of 1891, sec. 9 (General Law)	No report	None (?)			
Stanton	Montcalm	1881	1,303	L. A. No. 311 of 1881, chap. xiv, sec's 1, 6, 8	None	None	None	None	Mr. E. S. Stebbins, city clerk.
W. Bay City	Bay	1877	12,837	L. A. No. 387 of 1885, title viii, sec's 1, 6, 9	*To Regulate Burial*, March, 1882	Sec'y B'd of H.	Required	Required	Mr. M. B. Hume, deputy recorder.
Wyandotte	Wayne	1867	4,209	L. A. No. 389 of 1885, sec. 3 (General Law	No report	None (?)			
Ypsilanti	Washtenaw	1858	6,111	None	None	None	None	None	Mr. C. P. McKinstry, city clerk.

* References are given under this head to the latest provisions of city charters and ordinances. For charters, the year, number and subdivision of the Local Act or Session Law are stated; for ordinances, the numbers on pages in the latest compilation are given, together with the date of passage. The text of the charter provisions is given in the following pages, and also of the ordinances as far as the latter were obtainable.

† Clauses authorizing the registration of births occur in the charters of Detroit, Gladstone, Grand Rapids, Menominee, Muskegon and Port Huron; also of marriages in those of Detroit and Muskegon.

‡ "An ordinance requiring a report and record of births in this city has already been enacted to take effect on March 5, next. Another ordinance providing for the issuance of death and burial certificates will in all probability be passed by our council at its next meeting."—*City Clerk Miller in letter of Feb. 17, 1894.*

The following twenty-two cities require burial permits: Ann Arbor, Battle Creek (for removal), Bay City, Benton Harbor, Detroit, Flint, Grand Rapids, Hillsdale, Ironwood, Ishpeming, Jackson, Kalamazoo, Lansing, Ludington, Manistee, Marquette, Marshall, Menominee, Muskegon, Port Huron, Sault Ste. Marie and West Bay City. The remaining forty-eight cities of the State have no such requirement, so far as could be ascertained, except as transit permits may be used for removal of bodies by rail, or as the supervision of funerals of decedents from small-pox, diphtheria and other dangerous communicable diseases by the local health officer may include the specification of the manner of burial.

Certificates of death are required by nineteen cities. The list is identical with that of cities requiring burial permits given above, except that Battle Creek, Ishpeming, Ludington and Marshall should be excluded, and the city of Saginaw should be added. In the latter case these certificates are sent directly by physicians, upon blanks provided by the health officer, to the sextons of cemeteries, who are required to register all interments.

Certain details of interest relating to the subject of local municipal registration will now be presented, the facts being arranged in the following order: (*a*) Charter provisions of Michigan cities bearing upon vital registration, as contained (1) in the general law for the incorporation of cities; and (2) in the charters of individual cities; (*b*) city ordinances relating to registration, with (1) forms of certificates of death in use; and (2) forms of burial permits; (*c*) practical results of local registration in Detroit, Grand Rapids and other cities, as derived from the reports of their local registrars.

(*a*) PROVISIONS RELATING TO REGISTRATION OF VITAL STATISTICS CONTAINED IN THE CHARTERS OF MICHIGAN CITIES.

As many cities of the State are incorporated under the General Law for the Incorporation of Cities, the provisions of that act relative to the regulation of burials and registration of deaths will first be presented, and then the provisions of the special acts of incorporation of certain cities.

GENERAL LAW FOR THE INCORPORATION OF CITIES IN MICHIGAN.

The provisions of the General Law for the Incorporation of Cities (Public Act No. 178 of 1873; Howell's Statutes, Title XVI, Chapter 80) bearing upon the registration of vital statistics may be found under three general heads: (1) General powers of city corporations; (2) Public health; (3) Cemeteries.

1. Under the general powers of city corporations the law contains no express declarations in regard to the regulation of burials and the return of bills of mortality, although many city charters passed prior to 1873 contain such provisions. General authority for this purpose may be derived from Chapter XI:

(§ 2555.) SECTION 1, *54th*. The council shall have authority to enact all ordinances, and to make all such regulations, consistent with the laws and constitution of the State, as they may deem necessary for the safety, order and good government of the city, and the general welfare of the inhabitants thereof.

2. Chapter XIV, Public Health, provides:

(§ 2572.) SECTION 1. The council of any city may enact all such ordinances as may be deemed necessary for the preservation and protection of the health of the inhabitants thereof * * *

(§ 2578.) SEC. 7. The council of any city incorporated under this act, shall also have and exercise within and for the city, all the powers and authority conferred upon boards of health by chapter forty-six of the Compiled Laws of eighteen hundred and seventy-one, so far as the same are applicable and consistent with this act, and they may enact such ordinances as may be proper for regulating the proceedings and mode of exercising such powers and authority.

(§ 2579.) SEC. 8. The council when deemed necessary may establish a board of health for the city and appoint the necessary officers thereof, and provide rules for its government, and invest it with such power and authority as may be necessary for the protection and preservation of the health of the city; and in addition thereto the board shall have and exercise all the powers and authority conferred on boards of health by the chapter of the Compiled Laws referred to in the preceding section, so far as they may be exercised consistently with the provisions of this act. And the council may prescribe penalties for the violation of any lawful order, rule, or regulation made by the board of health or any officers thereof.

Chapter XLVI, of the Compiled Laws of 1871, referred to above, provides:

SEC. 5. The said board [of health] shall also make all regulations which they may deem necessary for the interment of the dead, and respecting burying grounds, for their township.

3. Chapter XV, *Cemeteries*, has been made a part of many city charters. Its provisions under which local registration of deaths may be carried out are as follows:

(§ 2580.) SECTION 1. Any city may acquire, hold, and own such cemetery or public burial place or places, either within or without the limit of the corporation as in the opinion of the council shall be necessary for the public welfare and suitable for the convenience of the inhabitants. And may prohibit the interment of the dead within the city, or may limit such interments therein to such cemetery or burial place as the council may prescribe; and the council may cause any bodies buried within the city in violation with any rule or ordinance made in respect to such burials, to be taken up and buried elsewhere.

(§ 2582.) SEC. 3. Whenever any city shall own, purchase or otherwise acquire any cemetery or cemetery grounds, the council shall appoint three trustees who shall be freeholders and electors in the city, and who, with the city clerk, shall constitute a "board of cemetery trustees." The three trustees so appointed shall hold their office for the term of three years, except that at the first appointment one shall be appointed for one year, one for two years, one for the term of three years from the first Monday in May of the year when appointed, and annually thereafter one trustee shall be appointed. The council may remove any trustee so appointed for inattention to his duties, want of proper judgment, skill, or taste for the proper discharge of the duties required of him, or other good cause. Said board shall serve without compensation.

(§ 2583.) SEC. 4. The board of cemetery trustees shall appoint one of their number chairman, and the city clerk shall be one of the board. And the council may, by ordinance, invest the board with such powers and authority as may be necessary for the care, management, and preservation of such cemetery and grounds, the tombs and monuments therein, and the appurtenances thereof; and in addition to the duties herein mentioned, the board shall perform such other duties as the council may prescribe.

(§ 2584.) SEC. 5. Said board, subject to the directions and ordinances of the council, shall have the care and management of any such cemetery or burial place or places, * * *

(§ 2585.) SEC. 6. Said board shall appoint the necessary superintendents and employés for the cemetery; * * * enforce the ordinances of the city made for the management and care thereof; and make such regulations for the burial of the dead, * * * as may be consistent with the ordinances of the city and the laws of the State.

(§ 2586.) SEC. 7. * * * The board of trustees shall report to the council annually on the first Monday in March, and oftener when the council shall so require * * * such other matter as the council shall require to be reported,—which report shall be verified by the oath of the clerks of the board.

(§ 2587.) SEC. 8. The council of any city, owning a public burial ground or cemetery, whether within or without the city, may pass and enforce all ordinances necessary to carry into effect the provisions herein and to control or regulate such cemetery or burial place * * * and to punish violations of any lawful orders and regulations made by the board of cemetery trustees.

SPECIAL ACTS OF INCORPORATION.

The provisions contained in the special acts of incorporation may be conveniently studied by dividing the cities to which they apply into two groups: (1) Cities having authority for registration purposes conferred under the head of general powers of their common councils; and (2) cities having such power defined under those portions of their charters that relate to cemeteries. Cities having power for registration purposes conferred under both of these heads, and also those having authority under provisions relating to public health, will be noted individually.

I.—Cities having special provisions in regard to the regulation of burials under clauses in their charters relating to the general powers and duties of their common councils.

Thirty-nine of the seventy cities in the State have in their charters, under the chapters defining the general powers and duties of the city council, special provisions relating to the regulation of burials, and in twenty cases directly authorizing the return of "bills of mortality." The list is as follows: Albion, Alpena, Ann Arbor, Battle Creek, Bay City, Belding, Big Rapids, Clare, Coldwater, Corunna, Detroit, Dowagiac, Eaton Rapids, Escanaba, Flint, Gladstone, Grand Haven, Grand Rapids, Greenville, Hastings, Hillsdale, Ionia, Ironwood, Ishpeming, Kalamazoo, Ludington, Marquette,

Marshall, Menominee, Muskegon, Negaunee, Niles, North Muskegon, Owosso, Pontiac, Port Huron, Saginaw, Sault Ste. Marie, St. Clair.

In thirteen of the cities in the above list, namely, Ann Arbor, Dowagiac, Escanaba, Gladstone, Ironwood, Ishpeming, Marshall, Menominee, Muskegon, Owosso, Pontiac, Port Huron, and Sault Ste. Marie, there are also special portions of the charters devoted to cemeteries, for the provisions of which as bearing upon the subject of the registration of deaths see below. In Detroit, in addition to the general provisions of the charter of 1883 given below, the act passed by the legislature of 1893 prescribing the powers and duties of the board of health contains a section requiring coroners to report monthly to the board of health all inquests held by them, together with certain statistical information. This act also authorizes the registration of births, and requires the clerk of Wayne county to report the number of marriages contracted each month in the city of Detroit to the board of health, thus giving a city health board full control, for the second time in the history of the State,* of that *tripos* of data—births, marriages and deaths—constituting a complete system of vital statistics.

In Grand Rapids the language of the charter giving the common council power to regulate the burial of the dead also defines the duties of the city health board in regard thereto.

Below may be found, in alphabetical order, the cities of this list with quotations from their charters showing the actual language employed by them in defining the powers and duties of their common councils with reference to the regulation of burials. Reference to the number and year of the local act containing the same, either as the original charter or as the latest amendatory provision, may be found in Table 106 preceding. Those cities having other and additional provisions under the title of "Cemeteries" are marked with an asterisk (*), while Detroit, Grand Rapids and Muskegon, in which the registration of vital statistics is expressly entrusted to the local boards of health, are marked by a dagger (†). In the case of Menominee, also, there are special provisions in regard to the board of health.

The language employed is substantially as follows:

The common council * * * shall have power, within said city, to enact, make, continue, establish, modify, amend and repeal such ordinances, by-laws and regulations as they deem desirable within said city for the following purposes:

ALBION.—To receive, hold and regulate the cemetery within the city of Albion, * * * which city is hereby required to receive, control and regulate the same, and the burial of the dead therein.

ALPENA.—To protect and regulate all cemeteries or grave-yards within the city, and all such without the limits of said city as such corporation may acquire, and to regulate the burial of the dead and the keeping of bills of mortality.

*ANN ARBOR.—To provide for obtaining, holding, regulating and managing burial grounds, within or without the city, when established for the benefit thereof: and to regulate the burial of the dead, and to compel the keeping and return of bills of mortality.
To regulate sextons and undertakers for burying the dead: * * *

BATTLE CREEK.—To regulate all graveyards in the city, and the burial of the dead.

BAY CITY.—To protect or regulate all cemeteries or graveyards within the city, and all such without the limits of said city as such corporations may acquire, and to regulate the burial of the dead and the keeping of the bills of mortality.
To prescribe rules to govern undertakers for burying the dead, * * *

BELDING.—To prescribe rules to govern sextons and undertakers for burying the dead.

BIG RAPIDS.—The city * * * may protect and regulate the use of any cemetery that it now has or may hereafter acquire, * * * and may make any rules or regulations that it may deem necessary or proper for the care thereof.

CLARE.—To regulate the burial of the dead, and to compel the keeping of bills of mortality.

COLDWATER.— * * * to regulate the cemeteries owned by the city of Coldwater; and all the by-laws, rules, regulations and ordinances heretofore made or enacted, or hereafter to be made or enacted, by said common council for the protection, improvement and management of said cemetery grounds, shall have as full force and effect in all respects as if said cemetery grounds were within the corporated limits of said city.

* The first instance occurs in the charter of Muskegon adopted in 1889.

CORUNNA.—To purchase suitable grounds for a cemetery; * * * regulate the burial of the dead; * * * and exercise a general control over all burial places in said city.

† DETROIT.—The common council * * * may also provide for the burial of strangers and poor deceased persons, and regulate the burial of the dead; and the registration of births and deaths, and to order and compel the ordering and keeping and returning of bills of mortality by physicians, sextons and others. In case of the death of any person in the city, every physician or person acting as such, who had charge of, or who was in attendance upon such person at the time of death, shall forthwith file in the office of the board of health, a certificate stating to the best of his knowledge, information and belief, the name, age, sex, nativity, occupation or profession, date and manner of death, and name of disease; and in order to carry out this provision it is authorized to enforce the same by its ordinances, and to punish any violation thereof.

The above provisions are found in the charter as constituted by the legislature of 1883. In addition thereto there are found in the act passed by the legislature of 1893, "To provide for and confirm the board of health for the city of Detroit, and prescribe its powers and duties," the following provisions relating to the registration of vital statistics:

It shall be the duties of the coroners of Wayne county, before the tenth day of each month to make a monthly report to the board of health of the inquests held by them respectively during the previous month, with a full description, so far as may be, of the age, sex, color, nationality, and cause and mode of death of the subjects of said inquests and such other particulars as the board may from time to time require, for the purpose of identifying such deceased persons; and in each case where an analysis is made for poison, a detailed report of such analysis shall be furnished and filed with said board of health in writing within ten days thereafter by the expert making such analysis.

It shall be the duty of the county clerk to report monthly to the board of health, each marriage contracted in the city of Detroit, giving the full name, age, color, occupation, birth-place and legal residence of each person married, and the date of such marriage.

It shall be the duty of each physician, accoucher, midwife, or other person in charge, who shall attend or assist at the birth of any child within the city of Detroit to forward a report to the board of health of said city within forty-eight hours after said birth, stating distinctly the date of birth, the sex and color of the child or children born, its or their physical condition, whether still-born or not, the full name, nativity and residence of the parents and the maiden name of the mother of said child or children, and any such physician, accoucheur, etc., who shall fail to report as herein required shall be punished by a fine not to exceed twenty-five dollars, or by imprisonment in the county jail not more than ninety days, or by both such fine and imprisonment, in the discretion of the court.

All public dispensaries, asylums, infirmaries, hospitals, schools, theaters, and all public institutions and places of public resort and their managers, officers, lessees and occupants shall report in writing when required by the board of health under its rules and regulations, such information as may in the judgment of the board be needed for the better discharge of its duties in said city.

* DOWAGIAC.—To provide for obtaining, holding, regulating and managing burial grounds, within or without the city, when established for the benefit thereof, regulate the burial of the dead, and to compel the keeping and return of bills of mortality.

To regulate sextons and undertakers, * * *

EATON RAPIDS.—To regulate all graveyards in said city and the burial of the dead.

* * * to purchase and control land for cemetery purposes either within or without the corporation limits of said city.

* ESCANABA.—To adopt rules, for the regulation of sextons and undertakers, in burying the dead.

FLINT.—To protect and regulate all public graveyards within the city limits, or adjacent thereto, belonging to said city, and all grounds procured, or that may be procured, for the purpose of public burial, and to compel the keeping and returning of bills of mortality.

* GLADSTONE.—To regulate the burial of the dead and registration of births and deaths; to provide hospital and cemetery grounds; to direct the returning and keeping of bills of mortality; and impose penalties on physicians, sextons and others for any default in the premises.

GRAND HAVEN.—* * * to protect and regulate all public graveyards and the burial of the dead in said city.

† GRAND RAPIDS.—To regulate the burial of the dead, and to compel reports of births and deaths to be made to the board of health, and the return of all burial permits to said board, and to provide for a complete record of births, deaths and interments to be kept in the office of the said board of health.

To prescribe rules to govern sextons and undertakers for burying the dead.

To provide for the preservation of the general health of inhabitants of said city; to make regulations to secure the same.

The last clause quoted, though bearing only remotely on the right of the common council to establish a system regulating burials as "securing the general health" of the inhabitants, is cited with the two preceding in the *Supplemental Ordinances*, p. 51, as authority for the ordinance "Relative to interment, etc." passed August 18, 1890.

GREENVILLE.—To regulate the burial of dead and to compel the keeping of bills of mortality.

HASTINGS.—To regulate all graveyards in said city and the burial of the dead.

HILLSDALE.—To regulate the burial of the dead, and to compel the keeping of bills of mortality.

IONIA.—To provide for obtaining, holding, regulating and managing burial grounds, within or without the city, when established for the benefit thereof; to regulate the burial of the dead and to compel the keeping and return of bills of mortality.

To prescribe rules to govern sextons and undertakers for burying the dead.

* IRONWOOD.--To purchase suitable grounds for a cemetery, * * * regulate the burial of the dead, * * * and exercise a general control over all burial places in said city.

* ISHPEMING.—To regulate all graveyards in said city and the burial of the dead.

KALAMAZOO.—To regulate all graveyards in said city and the burial of the dead.
* * * to purchase and control lands for cemetery purposes either within or without the corporation limits of the city.

LUDINGTON.—To protect and regulate all cemeteries or graveyards within the city and all such without the limits of said city as such corporation may acquire, and to regulate the burial of the dead and the keeping of bills of mortality.

MARQUETTE.—To purchase suitable grounds for a cemetery; * * * regulate the burial of the dead; * * * and exercise a general control over all burial places in said city; * * *
It shall be the duty of the controller * * * to countersign * * * all burial permits.

* MARSHALL.—* * * to purchase and control land for cemetery purposes either within or without the corporation limits of said city.

*† MENOMINEE.—To regulate the burial of the dead and registration of births and deaths; to provide hospital and cemetery grounds; to direct the returning and keeping of bills of mortality; and to impose penalties on physicians, sextons and others, for any default in the premises.

Furthermore, under Chapter XIV., Public Health, it is provided that:—

It shall be the duty of each and every practicing physician in the city of Menominee:
a. Whenever required by the health officer of said city to report to said health officer, at such times and in such forms as they may prescribe, the number of persons attacked with any pestilential, contagious or infectious disease attended by such physicians for the five days next preceding, and the number of persons attended by such physician who shall have died within the forty-eight hours next preceding such report, of any such pestilential, contagious or infectious disease.
b. To report in writing to said health officer every patient he shall have laboring under any pestilential, contagious or infectious disease, within twenty-four hours after he shall ascertain or suspect the nature of such disease.
c. To report in writing to the health officer when by him required, the death of any person who shall have died of any disease, within twenty-four hours thereafter, and to state in such report the specific nature and type of such disease.

The above clauses from the chapter of the charter of Menominee relating to the public health are given fully in order to show the close relation between the provisions necessary for the control of infectious diseases and those required by a prompt method of death registration. In addition to the preceding clauses under General Powers and Public Health the charter also embodies the authority for registration of deaths contained in the chapter on Cemeteries of the general law for the incorporation of cities. This ample authority is well carried out in the health ordinance, passed July 24, 1893, extracts from which are given on a following page.

*† MUSKEGON.—To prescribe rules to govern sextons and undertakers for burying the dead, * * *
To regulate the burying of the dead, and to compel the keeping and return of bills of mortality; also a return of births and marriages.

The board of health constitutes the board of cemetery trustees, and has the usual powers in regard to the regulation of burials that the chapter on Cemeteries in the general law confers. In addition to this there occur the following important specific provisions under the subject of Health Department:

The said board [of health] shall make such regulations as it may deem necessary, subject to the approval of the common council, for the conduct of funerals of persons dying of any malignant, infectious or contagious disease, and for the interment of the dead; and it shall be its duty to provide regulations for the proper certifying and record of every death within the corporate limits of said city, and for the record and certificate of cause of death of any body brought within the corporate limits of said city for interment, and to grant permits for the burial of the dead within said city and the cemeteries belonging to said city.

NEGAUNEE.—To purchase suitable grounds for a cemetery, * * * to regulate the burial of the dead, * * * and exercise a general control over all burial places in said city.

NILES.— * * * to regulate all graveyards and the burial of the dead in said city.

NORTH MUSKEGON.—To regulate the burial of the dead and to compel the procuring in proper form of burial permits.

*OWOSSO.—To regulate the burial of the dead, and to compel the keeping and return of bills of mortality.
To regulate sextons and undertakers for the burying the dead.

* PONTIAC.—To regulate the burial of the dead, and to compel the keeping and return of bills of mortality.
To regulate sextons and undertakers for the burying of the dead.

* PORT HURON.—The common council * * * may also provide for the burial of deceased strangers, and poor deceased persons, and regulate the burial of the dead, and the registration of births and deaths, and to order and compel the keeping and returning of bills of mortality by physicians, sextons and others.

SAGINAW.—To regulate the burial of the dead and to compel the keeping and return of bills of mortality.
To adopt rules for the regulation of sextons and undertakers in burying the dead.
The common council shall have power to purchase and to hold a suitable lot or lots of land, within or without the corporation limits, for the purposes of city cemetery or cemeteries; and they shall make such rules and regulations regarding the same as they may deem necessary; * * * The commissioners of the city cemeteries and the controller, shall constitute a board of superintendents of the city cemeteries.

It is further provided, under Title IV. "Officers—their Rights, Powers and Duties," that:—

It shall be the duty of the controller * * * to countersign * * * all burial permits.

* SAULT STE. MARIE.—To protect and regulate all cemeteries or graveyards within the city, and all such without the limits of said city as such corporation may acquire, and to regulate the burial of the dead and the keeping of bills of mortality.

* ST. CLAIR.—To regulate the burial of the dead, and to compel the keeping and return of bills of mortality.
To regulate sextons and undertakers for the burying the dead.

II.—Cities having provisions in regard to the regulation of burials under those portions of their charters relating to the control of cemeteries.

Forty-two of the seventy cities in the State have special charter provisions relating to the control of cemeteries, and these, for the most part, contain ample authority for the introduction of as thorough a system of registration of deaths as may be desired. In this list, as given below, are sixteen cities, distinguished by *italics*, in which no special charters were adopted, the provisions of the general law being made applicable to all matters not otherwise provided for. The provisions of Chapter XV of the general law for the incorporation of cities (see p. 293, preceding), relating to cemeteries, therefore apply in these cases. In fact, in nearly all of the cities of this list the language of this chapter of the general law has been adopted, in some instances minor changes, as, for example, in regard to the number of cemetery trustees, being incorporated therein.

The cities of this group are as follows:—Adrian, Ann Arbor, *Au Sable*, *Bessemer*, *Benton Harbor*, *Cadillac*, Cheboygan, Dowagiac, Escanaba, Gladstone, *Gladwin*, Grand Ledge, *Harrison*, Holland, *Hudson*, *Iron Mountain*, Ironwood, Ishpeming, Jackson, Lansing, Lapeer, Manistee, *Marine City*, Marshall, *Mason*, Menominee, Midland, *Monroe*, *Mt. Clemens*, Mt. Pleasant, Muskegon, *Norway*, Owosso, Pontiac, Port Huron, Sault Ste. Marie, St. Ignace, *St. Joseph*, *St. Louis*, Stanton, West Bay City, *Wyandotte*.

Among these are thirteen cities given in the preceding list, as having other provisions in regard to the regulation of burials under sections of their charters defining the general powers of their common councils. These are the following:—Ann Arbor, Dowagiac, Escanaba, Gladstone, Ironwood, Ishpeming, Marshall, Menominee, Muskegon, Owosso, Pontiac, Port Huron, Sault Ste. Marie. Menominee and Muskegon have also special provisions relating to the duty of their health boards as to the registration of deaths.

The general law provides for the appointment by the common council of three cemetery trustees, who, with the city clerk, shall constitute a "board of cemetery trustees." They are to appoint one of their number chairman, and the city clerk is required to act as clerk of the board. Among their duties it is specified that they shall appoint a superintendent, enforce the ordinances of the city in relation thereto, "and make such regulations for the burial of the dead . . . as may be consistent with the ordinances of the city and the laws of the State."

The board of cemetery trustees is also required to report to the council annually on the first Monday in March, among other items, "such other matters as the council may require to be reported," which comprehensive clause evidently admits of full mortality returns in case the council require the same by ordinance.

The cities that have adopted other provisions, or, in some cases, a portion of the full cemetery law in their charters, are as follows:

ADRIAN.—Sections 1, 2, 8 and 9 of Chapter XV appear as sections 162-166 of the city charter as reincorporated in 1887. Section 8 declares that:
The council of said city owning a public burial ground or cemetery, whether within or without the city, may pass and enforce all ordinances necessary * * * to control or regulate such cemetery or burial place.

ANN ARBOR.—The same sections of the general cemetery law for cities are adopted as in Adrian. They constitute sections 112-116 of the act of reincorporation of 1889.

MENOMINEE.—This city has, in addition to the full cemetery law, important provisions in its charter under General Powers and Public Health. They are given above.

MIDLAND.—The city of Midland and the township of Midland have a joint cemetery board constituted as follows: The mayor and the treasurer of the city of Midland, and the supervisor and clerk of the township of Midland. It is provided that:

Said board * * * shall enforce such rules and regulations as may be established by the board for the government and control thereof, and make such regulations for the burial of the dead, * * * as may be necessary and not inconsistent with the laws of the State.

MT. PLEASANT.—Sections 1, 2 and 3 only of the general law are adopted, the latter section being altered to make the number of trustees two; their term of office two years instead of three, and, finally, that,—
The power and duties of such board shall be regulated by the common council.

MUSKEGON.—The provisions of the general law relating to cemeteries are adopted substantially except that the board of health is substituted for a special board of cemetery trustees. For important provisions under General Powers of the Common Council and Public Health see the preceding list of cities.

OWOSSO.—The common council shall have power to purchase and to hold a suitable lot or lots of land, within or without the corporation limits, for the purpose of a city cemetery or cemeteries; and they shall make such rules and regulations regarding the same as they may deem necessary.
The commissioner of the city cemetery and the auditor shall constitute a board of superintendents of the city cemetery.
The superintendents of the city cemetery or cemeteries shall have the care of the city cemetery or cemeteries. * * * subject to the ordinances and direction of the common council.
It shall be the duty of said board of superintendents to publish an annual report in relation to the matters committed to their charge, in one of the newspapers printed in the city, between the first and fifteenth days of February in each year.

PONTIAC.—The common council shall have power to purchase and to hold a suitable lot or lots of land, within or without the limits of said city, for the purpose of a city cemetery or cemeteries; and they shall make such rules and regulations regarding the same as they may deem necessary.
The common council shall make such rules and regulations for the care and government of such cemeteries so purchased, or in any way held, or within the limits of said city, as they shall deem proper.
The care, supervision, management and control of the city cemeteries of the city of Pontiac shall be and is hereby intrusted to and vested in a board, to consist of five persons who shall be citizens of Michigan, of lawful age, and resident in the city of Pontiac. The said board shall be called and known as "The Board of Control of Cemeteries of the City of Pontiac."

This board (constituted in 1885; the previous clauses date from 1863) is given full control of all cemeteries, and its elected secretary is the official custodian of all records pertaining thereto. The board is required to make a report to the common council on the first Monday in July of each year "of all their doings," which report is filed with the city clerk and a duplicate preserved by the secretary of the board.

ST. CLAIR.—The common council shall have power to purchase and to hold a suitable lot or lots of land, within or without the corporation limits, for the purpose of a city cemetery or cemeteries, and they shall make such rules and regulations regarding the same as they may deem necessary.
The superintendent of the city cemetery shall have the care of the city cemetery, * * * subject to the ordinances and direction of the common council; * * * it shall be the duty of said superintendent to publish an annual report in relation to the matters committed to his charge, in a newspaper printed in the said city, between the first and fifteenth days of February, in each year.

(b) ORDINANCES OF MICHIGAN CITIES RELATING TO THE REGISTRATION OF VITAL STATISTICS.

Although practically all the cities of the State have specific charter provisions enabling them to register deaths, only about one-third of them, so far as could be ascertained, have carried this power into effect by the enactment of special ordinances for this purpose.—either directly, as in the "Ordinance regulating the recording and compiling of vital statistics" of the city of Lansing, or indirectly, as in the ordinance defining the duties of the boards of health of Detroit and Menominee, or those regulating cemeteries, *e. g.*, those of Saginaw and Marshall.

An exact knowledge of the nature of the local legislation relating to registration is important for several reasons: (1) In many cases requests for information as to the births or deaths of individuals in this State cannot be satisfactorily replied to by the central registration office owing to the fact that the enumeration as made by the supervisors and assessors under the present law is very defective, and consequently names of children born or of decedents may not be found upon the records preserved by the county clerks and by the Secretary of State, although they actually occurred in the State. If in any such case it be known that the birth or death occurred in a city in which immediate registration existed at the time, it is evident that another source of information is opened, and it is plainly the duty of the State registrar to supplement his imperfect records by more reliable ones as far as practicable. (2) The existence of these local systems of registration is an index of the necessity of a general registration law of greater efficiency than that at present in force. The fact that local authorities have undertaken such work, and in some cases carried it out with a considerable degree of success, indicates the general public appreciation of registration work when properly conducted. (3) Lastly, the study of these local provisions indicates with how few changes and at how slight additional cost, advantage might be taken of the registration machinery already in existence to construct an efficient modern system for the State, or, at the least, to obtain uniform monthly returns from all of the cities and larger villages that would be of great practical value.

The following ordinances and extracts of ordinances are taken from the authorized compilations supplied to this department by the officials credited in Table 105; in some cases, in which the compiled ordinances were not received, the text is that printed upon the registration blanks in use. In a few instances cities that have ordinances relating to registration are omitted as no copies could be obtained of the same, but it is believed that few of importance are unrepresented.

BATTLE CREEK.

AN ORDINANCE relative to vital statistics and burial permits.

SECTION 1. *Be it ordained by the common council of the city of Battle Creek*, That it shall not be lawful for any one to bury any deceased person in any place in said city outside of the grounds known as "Oak Hill Cemetery," and the "Catholic Cemetery," nor without a permit in writing, first obtained from the proper officers or agents having charge of such cemetery.

SEC. 2. It shall be the duty of the officer in charge of the records of each of said cemeteries to keep a record of the burials therein, which shall show the name, residence, place of death, age, cause of death, date of burial and nativity of the person deceased; also the right of burial and number of lot where interred.

SEC. 3. It shall not be lawful for any one to remove the body of any deceased person from the city without first obtaining a written permit from the city recorder, which permit shall be granted without cost to the applicant, upon furnishing satisfactory proof of the name, age, place of residence, occupation and nativity of such deceased person, the reasons for removal, and the place to which the body is to be removed. But no such permit for removal shall be granted if there is reasonable cause to believe that such person came to his or her death through unlawful means or practices, until an inquest shall have been held on such body. And the city recorder is hereby required to keep a record of all permits for removal as aforesaid, and of the particular facts required to be shown to obtain such permit.

SEC. 4. Any person who shall violate any of the provisions of this ordinance shall, upon conviction thereof, be punished by a fine of not less than five dollars and not exceeding twenty-five dollars and costs of prosecution, or by imprisonment in the county jail or city prison for a term of not less than ten days, and not exceeding sixty days; and before whom such conviction shall be had may make a further sentence, that in default of the payment of such fine and costs, within a time to be fixed by such court, the person so convicted shall be imprisoned in the county jail or city prison until such fine and costs be paid, for a term not exceeding sixty days.

SEC. 5. All prosecutions for violations of any of the provisions of this ordinance shall be commenced within three months after such violation.

Sections 6, 7 and 8 of said ordinance repealed July 6, 1885.

As amended July 6, 1885.

BAY CITY.

AN ORDINANCE to regulate the burial of the dead, and for the keeping of bills of mortality.

SECTION 1. It shall be the duty of the nearest friend, relative or attendant on any person deceased within the limits of Bay City, to procure, as soon as practicable, from the physician attending the deceased in his last illness, or in case there were no regular attending physician, from some reputable resident physician, a certificate stating, as near as may be, the time, cause or manner of death, number of days illness and disease of the deceased; also the name and residence and place of death of the deceased. It shall thereupon be the duty of the persons obtaining said certificate to present the same to the health officer of Bay City, or in his absence or inability, to any member of the board of health, who shall thereupon issue to said person or persons a permit for the burial of the said deceased.

SEC. 2. In case of the death of any person without friends, relatives or any persons attendant, it shall be the duty of any person cognizant of the fact to report the same to the health officer, who may proceed to act on his own knowledge of the facts, and issue a permit in the regular manner to the persons who shall have in charge the funeral of said deceased.

SEC. 4. No undertaker shall conduct or manage any funeral, within the limits of Bay City, unless a proper permit for the burial of the deceased shall have been issued by the health officer; nor shall any interment take place within said limits until the permit of the health officer, for the burial of the deceased, shall have been previously furnished to the sexton or other person in charge of the cemetery in which the interment is to take place, who shall file the same with the recorder of Bay City immediately after said burial.

SEC. 8. Any person or persons violating any of the provisions or requirements of this ordinance shall, on conviction thereof, be punished by a fine of not less than twenty-five nor more than three hundred dollars, together with the costs of prosecution, and by imprisonment in the jail of Bay county for a term not exceeding six months, or by either, in the discretion of the court; and if only a fine and costs be imposed, the court may sentence the offender to imprisonment in said jail until the payment thereof, for a period not to exceed three months.

The above is taken from the form of certificate of death in use in Bay City. In the compiled ordinances, p. 270, appears the following. No date is assigned to either this or the preceding, but the sections given below are probably the ones now in force.

AN ORDINANCE regulating the burial of the dead and keeping bills of mortality.

It is hereby ordained by the common council of Bay City:

SECTION 1 It shall be the duty of every undertaker or other person, before removing any corpse for burial, to make a duplicate record, legibly written in ink and signed by him, in books to be provided for that purpose by the city, showing, as nearly as can be ascertained, the name, age, sex, color, birthplace, occupation in life, whether married, the cause and place of death of deceased, the duration of his last illness, the place of burial and such other facts and detail as may be required by the board of health. Such certificate shall also show the name of the physician attending during last illness of deceased person, if any, and the name of the person from whom such information is obtained.

SEC. 2. No interment of the body of any person shall be made in the limits of Bay City, in any other place than in some existing cemetery or place regularly appropriated and set apart for the burial of the dead.

* * * * * * *

SEC. 4. The health officer shall cause one copy of such duplicate record, so required to be made by the undertaker, to be taken up, and from the same he shall make and keep in his office a record or register, to be provided by the city, of all persons buried by such undertakers, showing, in alphabetical order, the names of the deceased and such other facts as are in section 1 required, or as may, in the opinion of such health officer, be necessary or advisable to keep.

SEC. 5. Any person desiring a certified copy of such record may obtain the same from the health officer upon payment to him of the sum of fifty cents, as his fee for the same, which shall belong to said officer.

SEC. 6. Any person or persons violating any of the provisions or requirements of this ordinance shall, on conviction thereof, be punished by a fine of not less than twenty-five nor more than three hundred dollars, together with the costs of prosecution, and by imprisonment in the jail of Bay county for a term not exceeding six months, or by either, in the discretion of the court; and if only a fine and costs be imposed, the court may sentence the offender to imprisonment in said jail until the payment thereof, for a period not to exceed three months.

BENTON HARBOR.

RULES AND REGULATIONS OF THE BOARD OF HEALTH, 1891.

HEALTH LAWS.

I—DUTIES OF THE HEALTH OFFICER.

SECTION III.—The Health Officer, in addition to the duties required of him by the preceding sections of these regulations, is hereby authorized and instructed:

2. To investigate cases of sudden or accidental death or deaths occurring otherwise than under the care of a physician, and to order a coroner's inquest when deemed necessary.

3. To grant burial permits, and permits to remove dead bodies outside of the jurisdiction of this Board for the purpose of burial.

II.—GENERAL RULES FOR THE PREVENTION AND RESTRICTION OF DISEASE.

SECTION 5—MISCELLANEOUS.

RULE 28. The body of no person who shall have died within the jurisdiction of this Board shall be buried within, or taken without this city, for the purpose of burial without a permit so to do from the Health Officer or other officer of the Board of Health.

BIG RAPIDS.

AN ORDINANCE relating to cemeteries owned or controlled by the city of Big Rapids.

SECTION 1. *It is hereby ordained by the common council of the city of Big Rapids:* That the cemetery now owned by said city, and all cemeteries that may be hereafter acquired by said city, are hereby declared to be public cemeteries, and no person or persons, society or corporation, shall establish or locate any other cemetery within the limits of the city of Big Rapids.

SEC. 11. The superintendent of cemeteries * * * shall keep a record of all persons buried in any cemetery controlled by said city, giving in alphabetical order the names of deceased, age, color, sex, occupation, place of birth, and residence, if known, the disease or manner and time of death, and the number of lot, or locality in which the body was buried, which register shall be kept in the office of the city recorder.

Approved February 20, 1888.

GRAND HAVEN.

AN ORDINANCE relative to public cemeteries.

SECTION 1. *It is hereby ordained by the common council of the city of Grand Haven:* That the cemetery known as "Lake Forest Cemetery" is declared to be the public cemetery of the City of Grand Haven, and no person or persons shall establish or locate any other burying ground within the limits of said city.

SEC. 7. The city sexton shall have charge of the cemetery under the direction of the Board of Health * * * and he shall keep a register, to be provided by the Board of Health, of all persons buried in said cemetery, giving in alphabetical order the name of the deceased, age, color, sex, occupation, place of birth and residence, the disease or manner and time of death, and the number of the lot or locality in which the body was buried, which register shall be kept in the office of the Clerk of the Board of Health.

Approved October 2, 1873.

DETROIT.

AN ORDINANCE to amend section 12 of chapter 65, of the revised ordinances of 1890.

It is hereby ordained by the people of the city of Detroit:

SECTION 1. That Section 12 of Chapter 65 of the Revised Ordinances of 1890 be and the same is hereby amended so as to read as follows:

SEC. 12. It shall be the duty of every undertaker, or other person acting as such, having in charge the interment of any deceased person, to deposit with the city sexton, or sextons, or superintendent of the cemetery wherein said interment is to take place, the proper burial permit from the Board of Health; and it shall be the duty of the city sextons and superintendents of cemeteries in the city of Detroit to keep a register, to be provided by the city, of all persons buried in each of said cemeteries in alphabetical order the name of the deceased, the number of the lot in which the body was buried; a true copy of which register shall be certified to weekly by such sextons and superintendents and filed in the office of the Board of Health. No body or remains of any deceased person shall be buried or interred in any cemetery, burial ground or other place within the city limits, or be taken away or removed without the city limits, unless the proper permit therefor has been issued by the Board of Health. In case of the death of any person in the city, every physician or person acting as such, who had charge of or was in attendance upon such person at the time of death, shall forthwith file in the office of the Board of Health, a certificate stating all the particulars as to the name, age, sex, nativity, date and cause of death, name and character of disease to the best of his knowledge, information and belief. In case of no private physician or person acting as such being in attendance, the city physician of the proper district shall promptly make an examination and file a certificate as above required. And on receipt of certificate from the attending physician or city physician as aforesaid, or of a certificate of death from a coroner as to the cause of death, the Board of Health shall issue and is hereby authorized to issue a proper burial permit to the undertaker or person acting as such who has charge of the burial.

SEC. 2. This ordinance shall take immediate effect.

Approved July 8, 1890.

GRAND RAPIDS.

AN ORDINANCE relative to the interment of persons within the corporate limits of the city of Grand Rapids, or in any cemetery belonging to said city.

The common council of the city of Grand Rapids do ordain as follows: SECTION 1. That upon the death of any person within the corporate limits of the city of Grand Rapids, or in case of any dead person brought within the limits of the city of Grand Rapids for interment in any cemetery within said limits, or in any cemetery belonging to said city, it shall be the duty of every undertaker or other person who inters such deceased person, and before the removal of such deceased person for interment, and within thirty-six hours after death of such person, or within twenty-four hours after such deceased person shall have been brought from without the limits of said city within the limits of said city, for the purpose of interment in any such cemetery, to apply to the health officer of said city to obtain a permit for interment from said health officer, and such permit shall be issued only upon the presentation of the certificate of the attending physician or of the coroner.

SEC. 2. Such permit for interment shall in every case accompany the remains of such deceased person to the place of burial.

SEC. 5. Any person or persons who shall violate any of the provisions or requirements of this ordinance, on conviction thereof, shall be punished by a fine of not less than five dollars nor more than one hundred dollars, and costs of prosecution, or by imprisonment at hard labor in the common jail of the county of Kent, or in any penitentiary, jail, work-house, house of correction or alms-house of said city, in the discretion of the court or magistrate before whom the conviction may be had, for a period of not less than ninety days; and in case such court or magistrate shall only impose a fine and costs, the offender may be sentenced to be imprisoned at hard labor in the common jail of the county of Kent, or in any penitentiary, jail, work-house, house of correction or alms-house of said city, until the payment of such fine and costs, for a period of not less than five days nor more than ninety days.

Passed August 18, 1890.

NOTE—See Title III, Sec. 10 of Charter, subdivisions 19, 22, 42, for power to pass this ordinance.

AN ORDINANCE "Relative to cemeteries and the burial of the dead in the city of Grand Rapids," as amended January 29, 1877, read as follows:

The board of superintendents of city cemeteries shall keep a register, to be provided by the city, of all persons buried in each of said cemeteries, giving, in alphabetical order, the names of the deceased, age, color, sex, occupation, place of birth and residence, the disease, or manner and time or place of death, and the number of the lot, and the name of the cemetery in which the body was buried, which register shall be kept in the office of the city clerk, and no interments of any deceased persons shall be made in any of the cemeteries within the limits of, or which are owned by said city, until a certificate from the attending physician stating the time and cause of death of the deceased, shall have been furnished to the sexton in charge of the cemetery in which the interment is to take place, which certificate shall be filed by such sexton with the city clerk on the Monday next succeeding the day of burial.

The following blank form shall be used for such certificate:

I hereby certify that I attended ..... for ..... days, previous to his death, ... that ..... was sick .....days and died on the ..... day of ..... 18...., of..... disease.

I further certify, that I have received a regular medical education, and that I have graduated at the ..... Medical College, State of ....., in the year 18.....

Dated..... 18.....

.....,
Attending Physician.

This blank form shall be furnished at the expense of the city, by the city clerk, to all sextons in charge of cemeteries within the limits of said city, or which are owned by said city, and to all physicians or undertakers applying for them.

It shall also be the duty of the sexton or other person having the charge of any cemetery in said city, or which is owned by said city, to make a like register in said book, and the board of superintendents or other persons aforesaid, shall on Monday of each week, record in such register, in the manner above provided, the burials which have been made since their last report.

AN ORDINANCE relating to and requiring a report of the birth of all children in the city of Grand Rapids.

The common council of the city of Grand Rapids do ordain as follows:

SECTION 1. It shall be the duty of every physician, midwife, or person acting as such physician or midwife, to report in writing to the Board of Health, all births of children occurring in their practice, or at which they attended. Such report shall be made within twenty-four hours after such birth, and shall be as follows:

Full name of father; nationality; full maiden name of mother; nationality; place of birth of child; number (if any) and street; date of birth; color and sex; if twins, sex of each; if still-born, it shall be so stated.

And it is hereby provided that in case no physician or midwife are in attendance, it shall then be the duty of the parent of said child to make such report.

SEC. 2. Any person or persons who shall violate any of the provisions or requirements of this ordinance on conviction thereof, shall be punished by a fine of not less than two dollars, nor more than fifty dollars and costs of prosecution, or by imprisonment at hard labor in the common jail of the county of Kent, or in any penitentiary, jail, work-house, house of correction, or alms-house of said city, in the discretion of the court or magistrate before whom the conviction may be had, for a period not less than five days nor more than ninety days; and in case such court or magistrate shall only impose a fine and costs, the offender may be sentenced to be imprisoned at hard labor in the common jail of the county of Kent, or in any penitentiary, jail, work-house, house of correction, or alms-house of said city, until the payment of such fine and costs, for a period of not less than five days nor more than ninety days.

Passed October, 1891.

HILLSDALE.

AN ORDINANCE regulating the recording and compilation of vital statistics.

The common council of the city of Hillsdale ordain:

SECTION 1. That it shall be unlawful for any person to bury any deceased person in any vault, tomb, burying ground or cemetery in said city or under the control of the common council or its duly authorized agents, or to remove from or transport any person who has died within the corporate limits of said city to any place beyond its boundary for the purpose of burial or deposit, nor shall any deceased person brought within the corporate limits of the city for the purpose of burial or deposit in any vault, tomb, burying ground or cemetery within the said city, be so buried, deposited or otherwise finally disposed of, without first obtaining of the city clerk a permit as hereinafter provided.

SEC. 2. It shall be the duty of the city clerk, before making out any permit for the removal or interment of any deceased person, to require of the applicant for such a permit a certificate (a blank form of which he shall furnish free of cost) setting forth the date of death, name, age, sex, color, whether married, single, widow, widower, occupation, birthplace, how long a resident of the city and state, nativity of father and mother, place of death, cause of death—to be duly certified by the attending physician or some person made acquainted with the facts. It shall be the duty of the city clerk to record, free of cost, all such certificates.

SEC. 3. It shall be the duty of any person or persons having charge of any vault, tomb, burying ground or cemetery or place of deposit, to furnish a blank certificate (if none has been procured from the city clerk), and direct all persons applying to him or them for the purpose of burial, to file the same, duly made out as required in section 2 of this ordinance, with the city clerk, and procure his permit, and it shall be unlawful for any sexton or person to allow any deceased person to be deposited or buried within any vault, tomb, burying ground or cemetery under his charge or control, within the corporate limits of the city of Hillsdale without the permit be placed in his keeping.

SEC. 4. It shall be the duty of all coroners or persons officiating as such to file with the city clerk within thirty-six hours of the close of such investigation, a complete report of the finding in the case together with the data provided for in section 2 of this ordinance, so far as the same may be ascertained; and the city clerk shall on such evidence, duly filed in his office, grant his permit for burial.

SEC. 5. Any persons violating the provisions of this ordinance shall be deemed guilty of a misdemeanor, and on conviction thereof, may be fined not less than three dollars and costs of prosecution, and

in default of payment may be imprisoned in the county jail of Hillsdale county for a period of not more than ten days, in the discretion of the court.

SEC. 6. The provisions of this ordinance shall take effect on the first day of January, A. D. 1883, and all ordinances or parts of ordinances in conflict with the provisions of this ordinance are hereby repealed.

Passed by the common council November 27, 1882.

HOLLAND.

AN ORDINANCE establishing a Board of Health and defining its powers.

The city of Holland ordains:

SEC. 8. The board of health shall also have power, and it shall be their duty, to take such measures as they shall deem necessary and effectual to secure the inhabitants of the city from contagious, malignant and infectious diseases, and to preserve and promote the public health; and they shall have and exercise all the powers and authority conferred upon boards of health by chapter forty-six of the compiled laws of eighteen hundred and seventy-one, and the acts amendatory thereof, so far as the same shall be applicable and may be exercised in and for said city, consistent with the provisions of the city charter.

SEC. 9. The board shall make and prescribe the necessary sanitary rules and regulations for the government of the city and the promotion of the public health. Such rules shall be numbered serially and entitled, "health regulations." The style of said health regulations shall be: "It is hereby ordered by the board of health of the city of Holland." The health regulations shall be signed by the president, or person acting as president of the board and attested by the clerk, after which they shall be recorded in a book kept for that purpose and filed. Within one week after the passage of any health regulation the same shall be published in one of the newspapers published in the city. Each health regulation shall take effect twenty days from the day of its passage.

Approved December 22, 1886.

IRONWOOD.

AN ORDINANCE regulating the recording and compilation of vital statistics.

SECTION 1. It is hereby ordered by the common council of the city of Ironwood, that it shall be unlawful for any person to bury any deceased person in any vault, tomb, burying ground or any cemetery, in said city, or under the control of the common council or its duly authorized agents, or to remove from or transport any person who has died within the corporate limits of said city to any place beyond its boundary for the purpose of burial or deposit, nor shall any deceased person brought within the corporate limits of the city for the purpose of burial or deposit in any vault, tomb, burying ground or cemetery within said city, be so buried, deposited or otherwise finally disposed of, without first obtaining of the city clerk a permit, as hereinafter provided.

SEC. 2. It shall be the duty of the city clerk, before making out any permit for the removal or interment of any deceased person, to require of the applicant for such permit a certificate (a blank form of which he shall furnish free of cost), setting forth the date of death, name, age, sex, color, whether single or married, widow or widower, occupation, birth place, how long a resident of the city and State, nativity of father and mother, place of death and cause of death, to be duly certified by the attending physician or some person made acquainted with the facts. It shall be the duty of the city clerk to record, free of cost, all such certificates in such manner as he shall be directed by the health officer or board of health of the city.

SEC. 3. It shall be the duty of the city sexton, or person having charge of any vault, tomb, burying ground, cemetery or place of deposit, to furnish a blank certificate (if none have been procured from the city clerk), and direct all persons applying to him or them for purpose of burial to file the same, duly made out as required in section two of this ordinance, with the city clerk, and procure his permit, and it shall be unlawful for the city cemetery clerk or any sexton or person to allow any deceased person to be deposited or buried within any vault, tomb, burying ground or cemetery under his charge or control, within the corporate limits of the city of Ironwood, without such permit being placed in his keeping.

SEC. 4. It shall be the duty of all coroners, or persons officiating as such, to file with the city clerk, within thirty-six hours from the close of investigation of cause of death, a complete report of the finding in the case, together with the data provided for in section two of this ordinance, so far as the same may be ascertained; and the city clerk shall on such evidence, duly filed in his office, grant his permit for burial or removal.

SEC. 5. Any person violating the provisions of this ordinance shall be deemed guilty of a misdemeanor, and on conviction thereof, may be fined not less than three dollars and costs of prosecution, and in default of payment may be imprisoned in the city penitentiary for a period not more than ten days, in the discretion of the court.

SEC. 6. The provisions of this ordinance shall take effect on the first day of December, 1893 and all ordinances or parts of ordinances in conflict with the provisions of this ordinance are hereby repealed.

Adopted and approved October 3, 1893.

AN ORDINANCE relative to cemeteries and the burial of the dead.

SEC. 12. The city sexton, and every sexton or keeper of any public burial ground in the city of Ironwood shall, on the first Monday of every month, make and file with the city clerk a written statement of all burials made in the cemetery or burial grounds under his charge during the preceding month, setting forth particularly the name, age, sex, color, nativity, occupation, disease, and time of death, in each case, as near as the same can be ascertained, together with the particular place or lot in which the interment is made; and it shall be the duty of the city clerk to record every such statement filed with him in alphabetical order in a book of registry kept for that purpose.

SEC. 13. To the end that a proper record may be made of each burial within the grounds of said cemetery, the person applying shall give the following particulars, viz.:

Name of deceased.
Place of nativity.
Date of birth.
Date of decease.
Disease or cause of death.
Parent's name.
In whose lot interred.
Name of undertaker.

SEC. 14. Any violation or failure to comply with the provisions of this ordinance, or either of such provisions, shall be punished by a fine of not less than the cost of the prosecution, and not exceeding one hundred dollars, or, in default of payment thereof, by imprisonment in the city prison for any period not exceeding ninety days.

Adopted and approved October 3, 1893.

JACKSON.

AN ORDINANCE relative to the city cemetery of the city of Jackson.

Be it ordained by the common council of the city of Jackson as follows:—

SEC. 12. It shall be the duty of the sexton to keep a register of all interments made in the cemetery, in which shall be stated the name of the deceased person, the time of his decease, his late residence, the place and date of his birth, his occupation, and the disease or complaint of which he died, and at the expiration of every quarter report the same to the common council, and cause a copy thereof to be published in the city papers, which said register is to be delivered by the sexton to his successor in office.

SEC. 14. It shall be the duty of every undertaker or other person before removing any corpse for burial or from the city either by private or public conveyance to obtain from the Board of Health a permit so to do. And before obtaining such permit he shall deposit in their office a *certificate* setting forth the name, age, sex, nativity, color, occupation, whether married or single, time of residence in the corporation, place of previous residence, duration of illness, cause and date of death and the place and date of intended interment. In case a coroner's inquest shall be held, the fact shall be stated and the coroner shall be required to certify the fact to the Board of Health. And no sexton or other person shall assist in or assent to or permit any interment of such body for which such permit has not been given.

This section was passed September 5, 1887.

KALAMAZOO.

AN ORDINANCE relative to vital statistics and burial permits.

SECTION 1. *The city of Kalamazoo ordains:* That it shall not be lawful for any person to bury any deceased person in any vault, burying ground or cemetery in said city, or to remove from or transport the remains of any person who has died within the corporate limits of said city to any place beyond its boundary for the purpose of burial or deposit; nor shall any deceased person, brought within the corporate limits of said city for the purpose of burial or deposit in any vault, tomb, burying ground or cemetery, within said city, be so buried, deposited or finally disposed of without first obtaining of the health officer of said city, a permit as hereinafter provided.

SEC. 2. It shall be the duty of the health officer before making out such a permit for the interment or removal of any deceased person, to require of the applicant for such a permit, certificate (a blank form of which shall be furnished free of cost) setting forth name, sex age, color, cause and date of death, duration of last illness, probable cause of last illness, birth-place, nativity and names of father and mother, place of residence and proposed place of burial. All of which is to be certified to by the attending physician or some person cognizant of the facts, and to be known as a "certificate of death."

It shall be the duty of the health officer to record all such certificates of death in a book kept for that purpose at the office of the city clerk; the fee for recording each certificate shall be twenty-five cents. The health officer shall prepare a blank form of certificate of death with this ordinance printed on the back of the same.

SEC. 3. It shall be the duty of the sexton and each and every person having charge of any vault, tomb, burying ground, cemetery or place of deposit, to require of the person or persons applying to him for a place of burial the aforesaid burial permit, and file the same with the health officer within forty-eight hours after said burial; and it shall be unlawful for any person to be deposited or buried in any vault, tomb, burying ground or cemetery under his control within the corporate limits of said city, without such permit being first placed in his keeping.

SEC. 4. It shall be the duty of all coroners or persons officiating as such, to file with the health officer, within thirty-six hours from the close of any post mortem examination or inquest, a complete report of the findings in the case, together with the data, provided for in section 2 of this ordinance, so far as the same can be ascertained after diligent inquiry, and the health officer shall, upon evidence being duly filed in his office, grant his permit of burial or removal.

SEC. 5. It shall not be lawful for any person to bury, or cause to be buried, the body of any deceased person upon any lot in said city outside the limits of a public cemetery, without first obtaining the written consent of the health officer of said city, which consent shall be filed with the clerk of said city.

SEC. 6. No burial permit or permit for the removal without the city limits, shall in any case be granted in which there is probable or reasonable cause to suspect and believe that such deceased person came to his or her death through or by any unlawful means or practices until an inquest shall have been held on such body and the proper certificate shall have been filed with the health officer as hereinbefore provided and required.

SEC. 7. Any person who shall violate any of the provisions of this ordinance shall, upon conviction thereof, be punished by a fine not exceeding one hundred dollars and the cost of prosecution, or by imprisonment in the county jail for a term not less than ten days and not exceeding ninety days; and in case a fine and costs shall be imposed, the court before whom such conviction shall be had, shall make a further sentence, that, in default of the payment of such fine and costs within the time fixed by said court, the person so convicted shall be imprisoned in the county jail, until such fine shall be paid, not exceeding three months.

SEC. 8. All prosecutions for violation of any of the provisions of this ordinance shall be commenced within three months after such violation.

Adopted July 5, 1887.

LANSING.

AN ORDINANCE relative to cemeteries and the burial of the dead.

SEC. 14. The city sexton, and every sexton or keeper of any public burial ground in the city of Lansing shall, on the first Monday of every month, make and file with the city clerk a written statement of all burials made in the cemetery or burial grounds under his charge during the preceding month, setting forth particularly, the name, age, sex, color, nativity, occupation, disease and time of death, in each

case, as near as the same can be ascertained, together with the particular place or lot in which the interment is made; and it shall be the duty of the city clerk to record every such statement filed with him in alphabetical order in a book of registry kept for that purpose.

SEC. 15. To the end that a proper record may be made of each burial within the grounds of said cemetery, the person applying shall give the following particulars, viz.:

Name of deceased.
Place of nativity.
Date of birth.
Date of decease.
Disease, or cause of death.
Parents' names.
In whose lot interred.
Name of undertaker.
Passed April 22, 1878.

AN ORDINANCE relative to the collection of vital statistics.

SECTION 1. *Be it ordained by the common council of the city of Lansing*, That it shall be the duty of every physician and clergyman having charge of or officially attending any person sick or dying within the city of Lansing, to report to the city clerk of said city, name, age, sex, date and cause of death, color, nativity, place of burial or how disposed of, within a period not exceeding six days after death, burial or removal.

SEC. 2. Any physician violating the provisions of section one of this ordinance shall be deemed guilty of a misdemeanor, and on conviction thereof shall be fined not less than three dollars and costs of prosecution, in the discretion of the court.

Passed December 11, 1879.

AN ORDINANCE regulating the recording and compilation of vital statistics.

SECTION 1. *Be it ordained by the common council of the city of Lansing*, That it shall be unlawful for any person to bury any deceased person in any vault, tomb, burying ground, or cemetery in said city or under the control of the common council, or its duly authorized agents, or to remove from or transport any person who has died within the corporate limits of said city to any place beyond its boundary for the purpose of burial or deposit, nor shall any deceased person brought within the corporate limits of the city for the purpose of burial or deposit in any vault, tomb, burying ground, or cemetery within the said city, be so buried, deposited or otherwise finally disposed of, without first obtaining of the city clerk a permit as hereinafter provided.

SEC. 2. It shall be the duty of the city clerk, before making out any permit for the removal or interment of any deceased person, to require of the applicant for such permit a certificate (a blank form of which he shall furnish free of cost), setting forth the date of death, name, age, sex, color, whether single or married, widow or widower, occupation, birthplace, how long a resident of the city and State, nativity of father and mother, place of death, cause of death, to be duly certified by the attending physician or some person made acquainted with the facts. It shall be the duty of the city clerk to record, free of cost, all such certificates in such manner as he shall be directed by the health officer or board of health of the city.

SEC. 3. It shall be the duty of the city sexton, or persons having charge of any vault, tomb, burying ground, cemetery, or place of deposit, to furnish a blank certificate (if none have been procured from the city clerk), and direct all persons applying to him or them for purposes of burial to file the same, duly made out as required in section two of this ordinance, with the city clerk, and procure his permit, and it shall be unlawful for any sexton or person to allow any deceased person to be deposited or buried within any vault, tomb, burying ground, or cemetery under his charge or control, within the corporate limits of the city of Lansing, without such permit being placed in his keeping.

SEC. 4. It shall be the duty of all coroners, or persons officiating as such, to file with the city clerk, within thirty-six hours from the close of such investigation, a complete report of the finding in the case, together with the data provided for in section two of this ordinance, so far as the same may be ascertained; and the city clerk shall, on such evidence, duly filed in his office, grant his permit for burial or removal.

SEC. 5. Any person violating the provisions of this ordinance shall be deemed guilty of a misdemeanor, and on conviction thereof, may be fined not less than three dollars and costs of prosecution, and in default of payment may be imprisoned in the city penitentiary for a period not more than ten days, in the discretion of the court.

SEC. 6. The provisions of this ordinance shall take effect on the first day of April, A. D., 1880, and all ordinances or parts of ordinances in conflict with the provisions of this ordinance are hereby repealed.

Passed January 19, 1880.

LUDINGTON.

AN ORDINANCE relative to the city cemetery.

SEC. 9. The cemetery board and the city sexton shall each keep a register, to be furnished by the city, of all persons buried in said cemetery, giving in alphabetical order the name of deceased, age, color, sex, occupation, place of birth and residence; the disease or manner and time of death, and the number of the lot in which the body was buried, which register shall be kept in the office of the secretary of the said cemetery board.

SEC. 10. No deceased person shall hereafter be buried in said cemetery, until a permit in writing shall have been first obtained from the city recorder or the secretary of said cemetery board; and it is hereby made the duty of the city sexton to refuse entrance into said cemetery for the purpose of burial until the provisions of this section have been complied with.

SEC. 12. Any violation of or failure to comply with the provisions of this ordinance, shall be punished by a fine not exceeding one hundred dollars ($100.00) and costs, or by imprisonment not exceeding sixty days, or by both such fine, costs and imprisonment.

Approved May 16, 1890.

MANISTEE.

REGULATIONS OF THE BOARD OF HEALTH.

SEC. 4. Whenever a death shall occur from any cause within the limits of this city it shall be the duty of the householder, or any person having the body in charge, to procure a certificate of death from the physician attending the case, stating the name of the person deceased, age, and cause of death, and, if no physician had been called, for the alderman of the ward in which the death occurred, or from the health officer of the city, which certificate shall be presented to the city clerk, whose duty it shall be, on presentation thereof, to issue a burial permit and keep a record of the same; and any person violating the above regulations shall be prosecuted according to the laws of the State.

Adopted by the Board of Health, for the city of Manistee, February 8, 1883.

MARSHALL.

AN ORDINANCE for the regulation and protection of Oakridge cemetery and other cemeteries within said city of Marshall.

SEC. 4. The said recorder shall keep a list * * * of all orders for interments during his official term which list shall specify the date of such order, the name, age, place of residence and cause of death of the party interred, also the number of the lot and locality where such interment took place.

SEC. 6. On application being made to the recorder for the interment of any person deceased, by a relative or any friend of any party, or by a superintendent of the poor, it shall be his duty, if satisfied of the right of said interment to be made in the said cemetery, and upon a lot by the applicant to be designated, to deliver to such applicant an order to the sexton for interment.

SEC. 8. The said recorder shall make a full and accurate report to the common council two weeks preceding the close of his official term, and at any time when by the said common council requested, of all financial matters connected with the cemetery department; also of the list of deaths with the accompanying particulars as described in section 5.* On the adoption of the said report the said recorder shall cause it to be published as directed by the common council, * * *

Approved September 15, 1890.

MASON.

AN ORDINANCE relative to the city cemetery.

SEC. 3. The board of cemetery trustees shall * * * make such regulations for the burial of the dead, the care and protection of the grounds, monuments and appurtenances of the cemetery, as may be consistent with the ordinances and charter of the city.

SEC. 8. This ordinance shall take effect on the tenth day of April, A. D. 1878.

Approved March 19, 1878.

AN ORDINANCE relative to the city cemetery.

SEC. 4. The cemetery trustees shall appoint a sexton, who shall have the exclusive right and it shall be his duty to dig all graves, open graves when properly required, report all burials, removals of bodies, and reburials to the city clerk * * *

SEC. 5. It shall be the duty of the sexton to report to the city clerk all burials, removals and disinterments of bodies, together with the name and age of deceased, cause of death and the location of the lot where buried, together with such other items as shall be required by resolution of the common council from time to time. He shall also make complaint to any justice of the peace of the city of any and all violations of this ordinance and shall qualify and act as policeman in the city cemetery and he is hereby authorized and it shall be his duty to arrest any person who shall violate any of the provisions of this ordinance, or who shall while in said cemetery violate any of the provisions of any other ordinance of the city.

SEC. 6. The city clerk shall be clerk of the board of cemetery trustees and shall keep a record of all the proceedings of said board and shall keep a record of all burials, disinterments and reburials in said cemetery, which record shall give the name, age and cause of death of the deceased, locating the lot where buried and such other items as shall be required by the common council.

SEC. 11. This ordinance shall take effect on the first day of August, 1884.

Approved July 22, 1884.

MENOMINEE.

AN ORDINANCE providing for the protection of the health of the inhabitants of the city of Menominee. * * * and to generally regulate the sanitary affairs of said city, and prescribe rules and regulations for conducting the health department of said city.

The city of Menominee ordains:

SECTION II.--DUTIES OF HEALTH OFFICERS, PHYSICIANS AND HOUSEHOLDERS.

RULE 1. It shall be the duty of the health officer to make weekly reports to the Secretary of the State Board of Health of all cases of diphtheria, scarlet fever, small pox, typhoid fever, typhus fever, erysipelas, measles, septicæmia, pyæmia, puerperal fever or other contagious and infectious diseases, and he shall publish monthly in some paper of general circulation a certified copy of all deaths occurring within the city of Menominee, together with other important facts relative to mortality within said city.

SECTION III.—FUNERALS AND BURIAL PERMITS.

RULE 1. In all cases of funerals or burials held in the city of Menominee, it shall be the duty of the undertaker or person in charge of such funeral or burial, to obtain from the physician who attended the person of the deceased, or of the coroner in cases where the matter was laid before such officer, as the case

* Section 4 is probably intended.

may be, a certificate to the health officer showing the nature of the disease of which decedent died, and in case no physician or coroner attended such person, then such certificate shall be procured from such other person present during the illness as is most conversant with the nature thereof, and it shall be the duty of every physician, coroner and other person attending upon any sick person who shall come to his death, to grant such certificate upon the request of any undertaker or other person given in charge the funeral or burial of such decedent.

RULE 2. It shall be the duty of such undertaker or other person so having charge of such funeral or burial, to present the certificate called for in Rule 1 of this section, to the health officer, and thereupon the health officer shall issue to such applicant a permit for burial in the city cemetery, with such restrictions as the nature of the case may require, and no deceased person shall be buried within the limits of said city of Menominee without the certificates above mentioned having been first procured, and the keeper of the cemeteries shall refuse burial to any and every person until such certificate is presented, and it shall be the duty of the health officer to keep a record of all such certificates, showing the name of the person, the cause of the death and the date thereof.

RULE 3. Before any deceased person shall be removed from the city of Menominee, the person in charge of the corpse shall obtain permission from the health officer for such removal, and such permission will not be granted when decedent has died of any of the diseases especially named in section 2 of this ordinance, unless the body has been properly disinfected and inclosed in a hermetically sealed, or zinc or metal lined, air and fluid tight, burial case. When any corpse shall be so prepared in accordance with this section so that it may be shipped with perfect safety to the public, the health officer shall furnish to the applicant therefor, a certificate of the safe condition thereof, to be placed upon the coffin, or case thereof, in which such corpse is contained.

RULE 4. Public funerals are prohibited in all cases where the decedent has died of cholera, small pox, scarlet fever, diphtheria or typhus fever, and any and every person knowingly conducting, permitting or attending any public funeral in such cases shall be deemed guilty of a misdemeanor and subject to the penalties hereinafter provided.

SECTION VII.—BIRTHS AND DEATHS.

RULE 1. It shall be the duty of the person attending the birth of any child within the city of Menominee, or in case of inattendance by physician or midwife, then of the father or mother of such child, to report in blanks to be furnished by the health officer at his office, all the facts concerning said birth, and particularly the name of the child in full (if given name is known), the color and the sex; the name of the father and his occupation, the name of the mother previous to marriage and the date and place of the birth, with street number and place of nativity of father and mother, within six days after the birth of a child which was born alive, and it shall be the duty of the parents of such child to furnish the information herein called for to the physician, midwife or other person at such birth.

RULE 2. Any person whose duty it is to so report the birth of any child within said city, who shall fail so to do, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished as hereinafter provided.

RULE 3. It shall be the duty of the health officer to keep a record of all such births so reported, as well as of all deaths reported to him as in this ordinance provided, for use in making up the reports required by the general laws of the State, which such records shall be public records of said city, and shall be kept in such place as may be designated by the council of said city.

MUSKEGON.

AN ORDINANCE relating to the burial of the dead in the cemeteries of the city of Muskegon; and to the removal of dead bodies for burial; and to certificates as to cause of death of persons dying in the city of Muskegon, or who may be brought to said city for burial; and to procuring burial permits; and to repeal certain ordinances.

The common council of the city of Muskegon ordain:

SECTION 1. There shall be no burial of the remains of any deceased person within the limits of the city of Muskegon, except in the regularly appointed cemeteries of said city, nor except by complying with the provisions of this ordinance.

SEC. 2. Upon the death of any person within the corporate limits of the city of Muskegon, it shall be the duty of the undertaker, or person who inters such deceased person, to apply to the secretary of the board of health of said city, and obtain from him a written permit to remove the dead body of such deceased person for interment whether such interment is to take place in any cemetery in said city or not.

SEC. 3. That upon the death of any person within the corporate limits of the city of Muskegon, or in case any body of any deceased person shall be brought to said city for interment, it shall be the duty of every undertaker or other person who inters such diseceased person or removes such body, and before the removal of such deceased person for interment, and within thirty-six hours after death of such person or the bringing of such body to said city, to apply to the clerk of the board of health of said city and obtain a permit to remove the body of such deceased person for interment from the secretary of said board of health; and such permit shall be issued only upon the presentation of the certificate of either the attending physician, the family physician or the coroner, or the oath of some competent person as required in section five (5) of this ordinance.

SEC. 4. Such permit for interment or removal for interment shall in every case accompany the remains of such deceased person to the place of burial, if buried in any cemetery in said city, and shall be delivered by the undertaker to the sexton of the cemetery where such deceased person shall be interred.

SEC. 5. The certificate of death or oath required in section three (3) of this ordinance shall contain the name of the deceased person, the names of father and mother, if known, his or her color, date and place of death, his or her place of birth, his or her age in years, months and days, and shall state whether the deceased was single, married, a widower or widow, and cause of death, and shall be signed by either the physician, or by one of the coroners of the county of Muskegon, or sworn to by some competent person and such certificate and burial permit may be in the following forms:

CERTIFICATE OF DEATH.

THIS CERTIFICATE MUST BE FULLY AND ACCURATELY FILLED OUT.

Name of deceased..... ; (White.) (Colored.)
Names of father and mother (if known).....;

date of death.....; place of birth.....;
place of death, No..... .....Street, Muskegon, Michigan.
Age ..... years..... months..... days.
Single. Married. Widower. Widow. (Cross out the words not required.)
Cause of death, ...
I certify that I attended the person above named in last illness, who died of the disease stated, on the date above named. ....., M. D.
Address,.....
Place of burial,.....
....., Undertaker.
Sextons will return all certificates and their report on Monday of each week, to the city clerk.

BURIAL PERMIT.

No.....

OFFICE OF BOARD OF HEALTH,
Muskegon, Mich.,.....189... }

Permission is hereby given.....to remove for interment to.....
the remains of....., date of birth .....,
color....., sex....., occupation.....,
place of birth....., place of death, No.....street,
date of death....., cause of death.....
Single. Married. Widower. Widow.
(Cross out words not needed.)
Name of father....., name of mother.....,
name of cemetery, if in city....., name of city, village or township, if not in city....., lot....., block.....cemetery.
.....
Secretary of Board of Health.

No.....

Muskegon, Mich.,.....189..
Name of undertaker....., cemetery.....,
name of deceased....., date of birth.....,
color....., sex....., occupation.....,
place of birth....., place of death, No. .....street,
date of death.....
Single. Married. Widower. Widow.
Name of father....., name of mother.....

SEC. 6. When the cause of death of any deceased person dying in said city or brought to said city for interment is a contagious, infectious or pestilential disease, the body of such deceased person shall be placed in charge of an undertaker, or other competent person, who shall thoroughly disinfect the same before it shall be placed in the coffin, casket or other receptacle for burial and the same shall not be taken to any church or other public place for any purpose before burial, nor shall said casket, coffin or receptacle be opened at any time or for any purpose prior to such burial, nor shall any person under the age of twenty years act as pall-bearer at the funeral of such deceased person.

SEC. 7. Whenever the death of any person shall be caused by small-pox, varioloid, cholera or yellow fever, the undertaker, or person acting as such, shall not allow the body of such deceased person to be taken to any building, public or private, other than that upon the premises where such death occurred, but shall privately convey the same to the place of burial in some proper cemetery, between the hours of seven o'clock in the evening and seven o'clock in the following morning, and bury the same therein without any public demonstration or public funeral services whatsoever, unless it shall be otherwise directed by the board of health. *Provided*, That if such death shall occur outside of said city from any of the diseases mentioned in this section, no such body shall be allowed to be brought into said city for any purpose whatever.

SEC. 8. Any person who shall be convicted of the violation of any of the provisions of this ordinance shall be punished by a fine of not less than ten dollars, nor more than one hundred dollars, together with the costs of prosecution, or by imprisonment in the common jail of Muskegon county, for a period of not less than ten days, nor more than ninety days, or by both such fine and imprisonment, in the discretion of the court.

SEC. 9. All ordinances and parts of ordinances, inconsistent with the provisions of this ordinance, are hereby repealed.

SEC. 10. This ordinance will take effect and be in force from and after the twentieth day of January, 1890.

Approved December 18, 1889.

RULES AND REGULATIONS GOVERNING THE CEMETERIES BELONGING TO THE CITY OF MUSKEGON.

The board of public works of the city of Muskegon, Michigan, do ordain and establish the following rules and regulations governing the cemeteries belonging to the city of Muskegon:

ARTICLE 1. Previous to the burial of any body a permit must be obtained from the secretary of the board of public works of said city in accordance with the ordinance of said city, governing the burial of dead bodies, which permit shall be delivered to the sexton of the cemetery where the interment is to take place, and it shall be the duty of such sexton to keep a proper and accurate register of all such permits and burials, and make a weekly report to the secretary of the board of public works.

ARTICLE 2. Notice of interment must be given to the sexton of the cemetery where such interment is to take place, at least eight hours previous to the time of burial.

SAGINAW.

AN ORDINANCE to provide for the care, management and control of the city cemeteries.

Be it ordained by the common council of the city of Saginaw:

SEC. 11. It shall be the duty of the sexton of each of the cemeteries mentioned in section one of this ordinance, to keep a register of all interments in said cemeteries, in which shall be entered the name of

the deceased, his or her place of residence at the time of the death, occupation, disease or complaint causing death, and all other matters relating thereto as are or may be hereafter required by the general laws of the State of Michigan. The sexton shall report to the common council and to the cemetery commissioners, quarterly, the contents of said register.

It shall be the duty of any physician who has had charge of, or been in attendance once upon any patient who has died, while under such charge or attendance, to forthwith furnish the sexton a certificate, upon blanks to be furnished by the health officer of the city, in which certificate shall be stated the name of the deceased, date of death, place of birth, age at last birthday, occupation, if any, and disease or cause of death.

Passed March 2, 1891.

SAULT STE. MARIE.

ORDINANCE relative to the cemeteries of Sault Ste. Marie, and prescribing the duty of the commissioner of cemeteries.

The city of Sault Ste. Marie ordains:

SEC. 7. It shall be the duty of every undertaker, or other person acting as such, having the charge of the interment of any deceased person in said cemetery, to deposit with the commissioner of cemeteries a certificate from the attending physician of the deceased, or in case no physician was in attendance, from the city physician called by such undertaker to make examination into the case, stating all the particulars as to the name, age, sex, nativity, social condition, manner of death or character of the disease of the deceased person, which said certificate in blank shall be furnished to any undertaker or other person applying therefor to the recorder; and it shall be the duty of said commissioner to keep a register, to be provided by the city, of all persons buried in said cemetery, giving in alphabetical order the name of the deceased, the number of the lot, in which the body was buried, together with a transcript of the certificate furnished in the case. Said register shall be kept in the office of the recorder.

SEC. 9. Any violation of or failure to comply with the provisions of this ordinance shall be punished with a fine not to exceed one hundred dollars and costs, or in default of payment thereof within a specified time by imprisonment for a period of not to exceed ninety days, or by both fine and imprisonment, in the discretion of the court.

This ordinance is ordered to take effect on and after the 25th day of July, A. D. 1888.

Approved July 3, 1888.

WEST BAY CITY.

AN ORDINANCE relative to regulating the burial of the dead, and for the safe keeping of the records of the mortality thereof.

SECTION 1. *Be it ordained by the city of West Bay City:* That it is hereby made the duty of friends, relatives, or attendants of any person deceased, desiring to bury within the limits of West Bay City to procure from the attending physician before burial of said deceased person or in case there was no regular attending physician, then from some person acquainted with the facts, a certificate stating as near as may be the time, cause or manner of death, number of days of illness and disease of the deceased, also the name, residence, and place of death of deceased. It shall thereupon be the duty of the person or persons obtaining said certificate to present the same to the secretary of the board of health, or in his absence from his office in said city, then to some member of the board of health, who shall thereupon and without delay issue to said person or persons a permit which shall be countersigned by the recorder or one of the cemetery trustees for the burial of the said deceased. The said certificate when given by any regular physician shall be in the following form.

No. .....

CERTIFICATE OF DEATH.

1. Full name of deceased.....
2. Sex .....
3. Color .....
4. Single, married, widow or widower.....
5. Age .... years, ... months, days.
6. Place of death, No. ..... Street, ... Ward, City of.....,State of .....
7. Cause of death.....
8. Date of death.....day of ....., 18...., about..... o'clock ....M.
9. Birthplace (State or country).....
10. How long a resident of this city?
11. How long a resident of this State?
12. Occupation of deceased.....
13. Father's birthplace.....
14. Mother's birthplace.....
15. Proposed place of burial.....
16. I Hereby Certify, That the above facts are true to the best of my knowledge and belief.

.....
Person applying for permit.

17. I Hereby Certify, That the facts relative to the cause of death of.....are correct, according to the best of my knowledge and belief.

.....
Attending physician, coroner or other person acquainted with the facts.

Said blanks shall be furnished by the secretary at the expense of the city, to all regular practicing physicians applying for the same.

SEC. 2. In case of the death of any person, who is a stranger without friends or relatives, it shall be the duty of any resident of the city cognizant thereof, to report the same to the secretary of the board of health, or to any member of said board, who shall proceed to act on his own knowledge of the facts and issue a permit to the person or persons who shall have in charge the funeral of said deceased person.

SEC. 4. No undertaker or other person shall conduct or manage any funeral within the limits of West Bay City unless a proper permit for the burial of the deceased person shall have been issued by the secretary of the board of health or one of the members of said board; nor shall any interment take place

within the limits of this city until the permit of such officer for the burial of the deceased person shall have been previously furnished to the sexton or other person in charge of the cemetery in which the interment is to take place, who shall file such permit with the secretary of the board of health of said West Bay City, immediately after said burial.

SEC. 5. All certificates issued as required by this ordinance shall be filed with the secretary of the board of health of said West Bay City; and it shall be the duty of said secretary to keep on file all papers so furnished him by said chairman or any other member of said board of health.

SEC. 6. It shall be the duty of the secretary of the board of health to keep in his office a register to be provided by the city, of all persons buried in said city, giving in alphabetical order, the name of the deceased, age, color, sex, occupation, place of birth, and so far as known residence, the disease or manner, and time and place of death, and the cemetery, and number of lot set apart for the burial of such deceased person.

SEC. 7. No interment of the body of any person shall be made within the limits of West Bay City in any other place than in some existing cemetery or place regularly set apart for the burial of the dead.

SEC. 8. Any person or persons violating any of the provisions or requirements of this ordinance shall, on conviction thereof before any justice of the peace of the city of West Bay City be punished by a fine of not less than twenty-five dollars, nor more than one hundred dollars together with the costs of prosecution or by imprisonment in the city penitentiary of the city of West Bay City or in the common jail of the county of Bay not less than thirty days and not exceeding ninety days from the time of his or her conviction or by both such fine and imprisonment in the discretion of the court trying the offender.

Approved March 8, 1882.

(1) *Forms of Certificates of Death in use in certain Cities of Michigan.*

The form of the certificate of death employed in a system of registration is of great practical importance. Upon its general plan and inclusion of items, its wording, and even upon its typographical arrangement may largely depend the success of a system in obtaining full and accurate returns. It is needless to say that no method of registration that dispenses entirely with the certificate of death, as the present system of State registration does, has any standing in modern vital statistics.

Specimens of the blanks employed for this purpose under local ordinances were received from eighteen cities of the State, as follows: Ann Arbor, Bay City, Benton Harbor, Detroit, Flint, Grand Rapids, Hillsdale, Ironwood, Kalamazoo, Lansing, Manistee, Marquette, Menominee, Muskegon, Port Huron, Saginaw, Sault Ste Marie and West Bay City. Some representative forms are herewith presented:

Form of certificate of death used in Benton Harbor.

PHYSICIAN'S REPORT OF A DEATH.

Immediately after the death of any person under his professional care, the attending physician is requested to fill out one of these blanks and send it to the Health Officer, that there may be no delay in granting a Burial Permit. See Rule 28, Board of Health Rules and Regulations.

Name.....

Residence.....

Age.....Date of Death.....189....

Cause of Death.....

Signed.....M. D.

Benton Harbor, Mich.....189 ...

This represents the certificate of death reduced to its lowest terms. Were the item of sex stated, the facts given would constitute the most essential items concerning a decedent and answer the purpose of a local record in which the chief object is identification. Of course such a record is too meagre for many statistical purposes, for which, indeed, it was probably not intended.

Form of certificate of death used in Menominee.

PHYSICIAN'S CERTIFICATE.

MENOMINEE, MICH.,. .....189....

HEREBY CERTIFY THAT.....of No.....

.....Street, died on.....189...., of.....

Born.....; sex.....; age, years.....

Name of father . .....; occupation.....

Name of mother.....

Was post-mortem held?.....

.....M. D.,
Attending Physician.

As an identification certificate this must be considered an improvement over the preceding, as it contains the important items of sex, occupation, and, valuable for deaths of children especially, the names of father and mother of decedent. The space allotted to cause of death is insufficient, but place is given for statement as to *post-mortem*.

Form of certificate of death used in Detroit.

☞Physicians are requested by the Board of Health to fill out this certificate accurately, *and deliver to the Health Officer*, within twenty-four hours after death of the person to whom it relates.
MAXIMUM PENALTY for neglect of so doing, $500.

CERTIFICATE OF DEATH.

No.....

FOR THE MONTH OF..... IN THE CITY OF DETROIT, MICH.

1. Name..... Color.....
2. Sex.....Married.....Single.....
3. Age.....
4. Name of father of deceased.....Nativity.....
5. Name of mother of deceased.....Nativity.....
6. Occupation of deceased.....
7. Place of birth of deceased (Town, Country, State).....
8. Name of wife of deceased.....
9. Name of husband of deceased.....
10. Date of birth.....Date of death.....
11. Cause of death.....
12. Duration of disease.....
13. Place of death.....Street.....Ward
14. Place of burial.....
15. Undertaker.....

Residence of Physician.....

Detroit.....189.... .....M. D.,
Attending Physician.

Burial permit No..... Date.....189.... To be buried.....189....

☞No burial permits will be issued upon this certificate unless correctly filled out in ink, signed and returned by the attending physician or coroner.

SEC. 14. Any violation or failure to comply with the provisions of this ordinance, or either of such provisions, shall be punished by a fine of not less than the cost of the prosecution, and not exceeding one hundred dollars, or, in default of payment thereof, by imprisonment in the city prison for any period not exceeding ninety days.

Adopted and approved October 3, 1893.

JACKSON.

AN ORDINANCE relative to the city cemetery of the city of Jackson.

Be it ordained by the common council of the city of Jackson as follows:—

SEC. 12. It shall be the duty of the sexton to keep a register of all interments made in the cemetery, in which shall be stated the name of the deceased person, the time of his decease, his late residence, the place and date of his birth, his occupation, and the disease or complaint of which he died, and at the expiration of every quarter report the same to the common council, and cause a copy thereof to be published in the city papers, which said register is to be delivered by the sexton to his successor in office.

SEC. 14. It shall be the duty of every undertaker or other person before removing any corpse for burial or from the city either by private or public conveyance to obtain from the Board of Health a permit so to do. And before obtaining such permit he shall deposit in their office a *certificate* setting forth the name, age, sex, nativity, color, occupation, whether married or single, time of residence in the corporation, place of previous residence, duration of illness, cause and date of death and the place and date of intended interment. In case a coroner's inquest shall be held, the fact shall be stated and the coroner shall be required to certify the fact to the Board of Health. And no sexton or other person shall assist in or assent to or permit any interment of such body for which such permit has not been given.

This section was passed September 5, 1887.

KALAMAZOO.

AN ORDINANCE relative to vital statistics and burial permits.

SECTION 1. *The city of Kalamazoo ordains:* That it shall not be lawful for any person to bury any deceased person in any vault, burying ground or cemetery in said city, or to remove from or transport the remains of any person who has died within the corporate limits of said city to any place beyond its boundary for the purpose of burial or deposit; nor shall any deceased person, brought within the corporate limits of said city for the purpose of burial or deposit in any vault, tomb, burying ground or cemetery, within said city, be so buried, deposited or finally disposed of without first obtaining of the health officer of said city, a permit as hereinafter provided.

SEC. 2. It shall be the duty of the health officer before making out such a permit for the interment or removal of any deceased person, to require of the applicant for such a permit, certificate (a blank form of which shall be furnished free of cost) setting forth name, sex age, color, cause and date of death, duration of last illness, probable cause of last illness, birth-place, nativity and names of father and mother, place of residence and proposed place of burial. All of which is to be certified to by the attending physician or some person cognizant of the facts, and to be known as a "certificate of death."

It shall be the duty of the health officer to record all such certificates of death in a book kept for that purpose at the office of the city clerk; the fee for recording each certificate shall be twenty-five cents. The health officer shall prepare a blank form of certificate of death with this ordinance printed on the back of the same.

SEC. 3. It shall be the duty of the sexton and each and every person having charge of any vault, tomb, burying ground, cemetery or place of deposit, to require of the person or persons applying to him for a place of burial the aforesaid burial permit, and file the same with the health officer within forty-eight hours after said burial; and it shall be unlawful for any person to be deposited or buried in any vault, tomb, burying ground or cemetery under his control within the corporate limits of said city, without such permit being first placed in his keeping.

SEC. 4. It shall be the duty of all coroners or persons officiating as such, to file with the health officer, within thirty-six hours from the close of any post mortem examination or inquest, a complete report of the findings in the case, together with the data, provided for in section 2 of this ordinance, so far as the same can be ascertained after diligent inquiry, and the health officer shall, upon evidence being duly filed in his office, grant his permit of burial or removal.

SEC. 5. It shall not be lawful for any person to bury, or cause to be buried, the body of any deceased person upon any lot in said city outside the limits of a public cemetery, without first obtaining the written consent of the health officer of said city, which consent shall be filed with the clerk of said city.

SEC. 6. No burial permit or permit for the removal without the city limits, shall in any case be granted in which there is probable or reasonable cause to suspect and believe that such deceased person came to his or her death through or by any unlawful means or practices until an inquest shall have been held on such body and the proper certificate shall have been filed with the health officer as hereinbefore provided and required.

SEC. 7. Any person who shall violate any of the provisions of this ordinance shall, upon conviction thereof, be punished by a fine not exceeding one hundred dollars and the cost of prosecution, or by imprisonment in the county jail for a term not less than ten days and not exceeding ninety days; and in case a fine and costs shall be imposed, the court before whom such conviction shall be had, shall make a further sentence, that, in default of the payment of such fine and costs within the time fixed by said court, the person so convicted shall be imprisoned in the county jail, until such fine shall be paid, not exceeding three months.

SEC. 8. All prosecutions for violation of any of the provisions of this ordinance shall be commenced within three months after such violation.

Adopted July 5, 1887.

LANSING.

AN ORDINANCE relative to cemeteries and the burial of the dead.

SEC. 14. The city sexton, and every sexton or keeper of any public burial ground in the city of Lansing shall, on the first Monday of every month, make and file with the city clerk a written statement of all burials made in the cemetery or burial grounds under his charge during the preceding month, setting forth particularly, the name, age, sex, color, nativity, occupation, disease and time of death, in each

case, as near as the same can be ascertained, together with the particular place or lot in which the interment is made; and it shall be the duty of the city clerk to record every such statement filed with him in alphabetical order in a book of registry kept for that purpose.

SEC. 15. To the end that a proper record may be made of each burial within the grounds of said cemetery, the person applying shall give the following particulars, viz.:

Name of deceased.
Place of nativity.
Date of birth.
Date of decease.
Disease, or cause of death.
Parents' names.
In whose lot interred.
Name of undertaker.

Passed April 22, 1878.

AN ORDINANCE relative to the collection of vital statistics.

SECTION 1. *Be it ordained by the common council of the city of Lansing*, That it shall be the duty of every physician and clergyman having charge of or officially attending any person sick or dying within the city of Lansing, to report to the city clerk of said city, name, age, sex, date and cause of death, color, nativity, place of burial or how disposed of, within a period not exceeding six days after death, burial or removal.

SEC. 2. Any physician violating the provisions of section one of this ordinance shall be deemed guilty of a misdemeanor, and on conviction thereof shall be fined not less than three dollars and costs of prosecution, in the discretion of the court.

Passed December 11, 1879.

AN ORDINANCE regulating the recording and compilation of vital statistics.

SECTION 1. *Be it ordained by the common council of the city of Lansing*, That it shall be unlawful for any person to bury any deceased person in any vault, tomb, burying ground, or cemetery in said city or under the control of the common council, or its duly authorized agents, or to remove from or transport any person who has died within the corporate limits of said city to any place beyond its boundary for the purpose of burial or deposit, nor shall any deceased person brought within the corporate limits of the city for the purpose of burial or deposit in any vault, tomb, burying ground, or cemetery within the said city, be so buried, deposited or otherwise finally disposed of, without first obtaining of the city clerk a permit as hereinafter provided.

SEC. 2. It shall be the duty of the city clerk, before making out any permit for the removal or interment of any deceased person, to require of the applicant for such permit a certificate (a blank form of which he shall furnish free of cost), setting forth the date of death, name, age, sex, color, whether single or married, widow or widower, occupation, birthplace, how long a resident of the city and State, nativity of father and mother, place of death, cause of death, to be duly certified by the attending physician or some person made acquainted with the facts. It shall be the duty of the city clerk to record, free of cost, all such certificates in such manner as he shall be directed by the health officer or board of health of the city

SEC. 3. It shall be the duty of the city sexton, or persons having charge of any vault, tomb, burying ground, cemetery, or place of deposit, to furnish a blank certificate (if none have been procured from the city clerk), and direct all persons applying to him or them for purposes of burial to file the same, duly made out as required in section two of this ordinance, with the city clerk, and procure his permit, and it shall be unlawful for any sexton or person to allow any deceased person to be deposited or buried within any vault, tomb, burying ground, or cemetery under his charge or control, within the corporate limits of the city of Lansing, without such permit being placed in his keeping.

SEC. 4. It shall be the duty of all coroners, or persons officiating as such, to file with the city clerk, within thirty-six hours from the close of such investigation, a complete report of the finding in the case, together with the data provided for in section two of this ordinance, so far as the same may be ascertained; and the city clerk shall, on such evidence, duly filed in his office, grant his permit for burial or removal.

SEC. 5. Any person violating the provisions of this ordinance shall be deemed guilty of a misdemeanor, and on conviction thereof, may be fined not less than three dollars and costs of prosecution, and in default of payment may be imprisoned in the city penitentiary for a period not more than ten days, in the discretion of the court.

SEC. 6. The provisions of this ordinance shall take effect on the first day of April, A. D., 1880, and all ordinances or parts of ordinances in conflict with the provisions of this ordinance are hereby repealed.

Passed January 19, 1880.

LUDINGTON.

AN ORDINANCE relative to the city cemetery.

SEC. 9. The cemetery board and the city sexton shall each keep a register, to be furnished by the city, of all persons buried in said cemetery, giving in alphabetical order the name of deceased, age, color, sex, occupation, place of birth and residence; the disease or manner and time of death, and the number of the lot in which the body was buried, which register shall be kept in the office of the secretary of the said cemetery board.

SEC. 10. No deceased person shall hereafter be buried in said cemetery, until a permit in writing shall have been first obtained from the city recorder or the secretary of said cemetery board; and it is hereby made the duty of the city sexton to refuse entrance into said cemetery for the purpose of burial until the provisions of this section have been complied with.

SEC. 12. Any violation of or failure to comply with the provisions of this ordinance, shall be punished by a fine not exceeding one hundred dollars ($100.00) and costs, or by imprisonment not exceeding sixty days, or by both such fine, costs and imprisonment.

Approved May 16, 1890.

(2) *Forms of Burial Permits in use in certain Cities in Michigan.*

Samples of the blanks in use for this purpose were received from nearly the same list of cities that supplied certificates of death. In Saginaw, apparently, no burial permit is required, the certificates of death being made returnable directly to the sextons of cemeteries who act as registrars. In some places the burial permit seems to serve as a certificate of death also, no special form of the latter being submitted.

Although the burial permit is an essential link in the chain of efficient registration, and no interment or removal for burial should be permitted, under stringent penalties, without such authorization from the proper officer of each township, village or city, its statistical interest is less than that of the certificate of death. In its simplest form it is simply a statement that the law requiring a certificate of death or the filing of certain statistical information has been complied with, and directing the sexton to allow the interment. In many cases more or less of the information given in the certificate of death is copied in the burial permit by the officer issuing the same, and this information serves as the basis of a report by the sexton or superintendent of the cemetery. It is not deemed necessary to reproduce any of the blanks employed for this purpose.

(c) PRACTICAL RESULTS OF LOCAL MUNICIPAL REGISTRATION OF VITAL STATISTICS IN MICHIGAN.

The material obtainable in regard to this subject is very meagre, and is practically confined to the statements given in the printed monthly bulletins of Detroit and Grand Rapids (and the annual reports of the former city) issued by the city boards of health. Files of these bulletins, very nearly complete, were preserved in the office of the Secretary of the State Board of Health, and were kindly placed at the disposal of this Department for the present investigation. With these were also newspaper reports of mortality in the city of Niles for the years 1890-91, manuscript returns from the health officer of Kalamazoo to the Secretary of the State Board of Health for 1890 and the first three months of 1891, and manuscript reports of the sexton of Mt. Hope cemetery, Lansing, of interments for the three years 1890-92. These latter reports were supplemented by the record of burial permits filed in the city clerk's office of Lansing.

Efforts were made, by correspondence with the local registrars of cities having systems of registration, to obtain at least the gross results of registration for the three years, 1890-92, and also to learn the number of deaths recorded from a few of the most important diseases. No information could be obtained, however, owing probably to the fact that no systematic reports were made, nor was it even possible to complete the returns for the city of Kalamazoo. It may be regarded as very fortunate that complete returns can be presented for Detroit and Grand Rapids for the three years studied, and that these cities are so situated as to be fairly representative of the average conditions affecting mortality in the State at large.

ANNUAL DEATH-RATES FROM ALL CAUSES.

The following table shows the numbers of deaths registered for each of the years 1890-92 in all of the cities from which any information was obtainable. Manistee and Muskegon are also included, the numbers given being for the census year 1889-90, as stated in the Compendium of the Eleventh Census, Part II., p. 18, these two cities, with Detroit, being the only cities of Michigan included among the "registration cities."

Deaths and death-rates **registered** *in certain cities of Michigan, 1890-92. (Still-births included.)*

Cities.	Deaths registered.			Death-rates per 1,000.		
	1892.	1891.	1890.	1892.	1891.	1890.
Detroit	5,417	4,681	4,303	24.4	21.9	20.9
Grand Rapids	1,352	1,255	1,091	19.4	20.2	18.1
Kalamazoo	.....	.....	314	.....	.....	17.6
Manistee	.....	.....	204	.....	.....	15.9
Muskegon	.....	.....	480	.....	.....	21.1
Niles	.....	78	90	.....	18.2	21.4

These rates may be compared with the rates as obtained from the State enumeration for the corresponding years in Table 105, and will be found decidedly higher as a rule. The two exceptions are Detroit in 1890, due probably to the large number of fraudulent entries for that year, and Niles in 1890. In the latter case, both records agree exactly, and it is probable that the register was used by the assessor in making his returns. The rates given for Detroit and Grand Rapids in the above statement are higher than those used on page 4 since still-births and premature births are here included.

The general conclusion to be drawn from these rates of Michigan cities is that the death-rate in Michigan is probably much greater than the State registration returns have ever shown, and that this State, while having a favorable degree of mortality, has not such an excessively low death-rate as to practically exclude it from direct comparison with the Eastern States in which more exact registration exists. Instead of a mortality of 10 per 1,000 or less, as indicated by the returns, the actual death-rate is probably from 16.5 to 17.5 per 1,000 for the entire State, and the death-rates of Michigan cities are probably still higher, perhaps 18.5 to 20.5 per 1,000 on the average.

DEATH-RATES FROM IMPORTANT DISEASES.

Death-rates from individual diseases as enumerated under the State system are subject to the same percentage of omissions, on the average, as total deaths, but from the different seasonal distribution of different diseases, the amounts of omission vary somewhat. That all of these rates are much below the truth is well shown in the following comparison of deaths as registered immediately upon their occurrence in Detroit and Grand Rapids and those enumerated for the State as a whole. The statement made on a preceding page (p. 160) that the death-rates per 100,000 based upon the returns would require to be increased by at least 60 per cent for comparison with rates obtained under an accurate system of registration, is seen to be well within the truth. The rates given for Detroit and Grand Rapids are probably somewhat higher than the death-rates for the State, and allowance must be made for local epidemics, as for example, the unusual prevalence of scarlet fever in Detroit in 1892, but taken as a whole the death-rates for individual diseases given in the following comparison are more nearly correct than any statements previously made in these reports. They may be compared directly with the death-rates for the corresponding diseases in other States and countries given in Tables 77 to 81 (pp. 209-213).

Table 107.—*Deaths from important diseases and groups of diseases registered* by the city board of health of Detroit for the years 1890–92, inclusive, by months.*

Causes of death.	Year 1892.	Months, 1892.												Year 1891.	Months, 1891.											Year 1890.	Months, 1890.											
		Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.		Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.		Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
TOTAL DEATHS:																																					
Still-births included	5417	582	374	436	493	453	423	686	501	433	394	359	333	4681	361	293	414	405	393	261	488	502	386	379	322	427	4303	437	280	370	334	330	317	477	385	384	341	324	324
Still-births excluded	4938	496	337	399	458	428	392	610	458	392	356	318	294	4250	326	282	369	374	347	315	414	461	360	342	286	394	3916	407	254	330	306	295	282	447	364	349	313	254	285
SPECIFIED DISEASES	4703	483	332	390	443	413	366	577	417	375	323	303	281	4095	316	255	358	361	336	305	402	437	346	330	275	374	3782	398	251	319	294	283	271	429	346	342	305	268	276
Dangerous communicable diseases	*1483*	*125*	*88*	*155*	*170*	*131*	*145*	*142*	*107*	*109*	*111*	*102*	*98*	*1133*	*96*	*74*	*118*	*82*	*92*	*71*	*71*	*95*	*106*	*117*	*78*	*133*	*1147*	*103*	*71*	*101*	*100*	*85*	*76*	*92*	*75*	*109*	*112*	*116*	*107*
Consumption	381	40	24	43	37	41	22	42	23	32	31	26	20	364	32	26	38	29	33	28	29	38	24	34	18	35	332	38	14	32	34	31	29	22	26	25	24	32	25
Other tubercular diseases	189	10	11	16	13	11	22	24	19	21	15	14	13	181	7	8	19	19	8	19	16	13	26	22	7	17	166	19	17	17	11	13	12	24	10	18	12	6	7
Croup	112	9	7	10	14	12	7	5	6	8	10	9	15	90	14	12	13	5	5	6	1	5	7	6	8	8	140	8	10	9	12	8	4	6	11	14	24	20	14
Diphtheria	342	34	20	32	56	38	31	24	15	11	27	30	24	272	27	15	36	19	26	9	15	14	20	28	16	47	362	24	17	26	29	19	10	29	22	45	45	48	48
Erysipelas	9	1	1	1	1	---	---	---	---	---	1	---	4	17	3	2	2	1	3	1	3	1	---	---	1	---	9	1	---	1	1	---	1	1	1	---	1	1	1
Fever, Puerperal	28	5	1	6	4	---	3	1	1	2	1	2	2	29	2	5	2	2	4	2	---	5	3	2	---	2	23	2	2	3	5	2	2	1	---	1	1	2	2
Fever, Scarlet	206	19	20	35	35	20	27	18	9	8	3	3	9	70	3	1	1	2	3	1	4	7	5	10	13	20	39	7	3	5	6	4	5	4	1	---	---	2	2
Fever, Typhoid	194	6	4	11	10	4	33	26	30	26	19	16	9	63	2	2	---	1	2	3	1	3	†18	15	13	3	28	1	1	3	1	---	2	3	4	5	3	2	3
Measles	6	---	---	---	---	3	---	---	1	---	1	---	1	31	5	---	6	3	5	1	2	5	2	---	1	1	40	3	4	5	1	7	9	2	---	1	1	2	5
Small-pox	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chicken-pox	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1	---	---	---	---	---	1	---	---	---	---	---	---
Whooping-cough	16	1	---	1	---	2	---	2	3	1	3	2	1	16	1	3	1	1	3	1	---	4	1	---	1	---	7	---	3	---	---	1	1	---	---	---	1	1	---
Bladder diseases	11	---	2	1	1	---	2	1	2	1	---	1	---	8	---	1	---	1	1	1	1	---	1	2	---	---	8	1	1	1	1	---	---	1	---	---	1	---	2
Bowel diseases	*692*	*12*	*30*	*19*	*25*	*23*	*27*	*219*	*148*	*100*	*56*	*28*	*25*	*650*	*21*	*14*	*19*	*16*	*14*	*63*	*172*	*154*	*91*	*46*	*18*	*22*	*484*	*15*	*9*	*17*	*16*	*14*	*33*	*161*	*105*	*63*	*26*	*14*	*11*
Bowels, Inflammation of	110	3	9	8	12	4	5	20	13	13	3	14	6	105	3	2	6	5	4	10	23	15	9	7	7	14	88	2	5	4	5	3	6	23	16	8	8	6	2
Diarrhea	21	---	3	4	---	3	---	2	---	4	5	---	---	60	1	3	3	2	2	4	17	12	8	6	1	1	38	1	1	2	1	---	2	10	8	5	3	1	4
Cholera infantum	426	1	2	---	2	5	13	173	125	69	26	6	4	364	1	1	3	---	3	39	117	111	63	21	3	2	247	---	---	1	1	3	15	112	64	42	9	---	---

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Table 108.—*Deaths from important diseases and groups of diseases registered* by the city board of health of Grand Rapids for the years 1890–92, inclusive, by months.*

Causes of death.	Year 1892.	Months, 1892.												Year 1891.	Months, 1891.												Year 1890.	Months, 1890.											
		Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.		Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.		Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
TOTAL DEATHS:																																						
Still-births included	1352	166	99	110	118	97	96	142	134	114	102	78	96	1317	80	96	119	129	96	†58	93	152	150	123	106	115	1091	94	105	76	82	78	60	100	147	107	76	79	87
Still-births excluded	1188	152	86	91	105	87	80	132	124	95	84	70	82	1206	77	90	104	112	80	58	84	143	137	120	98	103	1012	89	99	70	76	75	54	93	144	97	66	70	79
SPECIFIED DISEASES	1133	151	85	84	93	83	77	124	118	91	80	65	77	1169	76	88	102	111	77	54	83	140	135	115	91	97	968	85	96	67	69	69	48	91	140	93	65	67	78
Dangerous communicable diseases	*291*	*24*	*21*	*25*	*35*	*26*	*22*	*25*	*30*	*21*	*18*	*17*	*27*	*329*	*29*	*20*	*32*	*28*	*19*	*12*	*22*	*28*	*40*	*36*	*40*	*23*	*312*	*30*	*41*	*30*	*21*	*24*	*7*	*16*	*28*	*29*	*34*	*25*	*27*
Consumption	129	14	11	11	12	8	11	14	16	11	6	4	11	111	15	8	7	8	10	2	8	11	10	12	13	7	120	11	10	15	10	13	5	11	10	10	10	6	9
Other tubercul'r diseases	31	1	4	...	4	3	2	2	7	2	3	3	3	42	1	1	3	5	...	...	4	6	7	7	4	4	20	2	3	2	...	...	1	...	3	4	2	1	2
Croup	8	1	..	...	1	1	2	...	...	...	2	...	1	10	2	...	...	3	...	1	...	...	...	2	2	...	20	...	8	1	1	1	1	...	1	1	1	3	2
Diphtheria	44	2	2	...	5	5	4	2	3	4	1	7	9	84	7	4	9	3	3	4	4	11	12	10	11	6	97	14	16	9	6	8	...	4	7	6	10	7	10
Erysipelas	2	...	1	1	...	...	...	...	...	...	...	...	...	2	...	...	1	1	...	...	...	...	...	...	...	...	3	...	1	...	...	...	...	1	...	...	1	...
Fever, Puerperal	7	...	...	1	2	1	...	1	...	...	1	...	1	6	...	1	1	...	1	1	1	...	...	...	...	1	4	...	1	1	...	1	...	...	...	...	1	...
Fever, Scarlet	7	1	1	2	...	...	...	1	...	...	...	1	1	22	...	2	4	4	1	2	3	...	2	1	2	1	7	2	1	...	...	...	...	...	1	1	1	1
Fever, Typhoid	52	5	2	10	10	6	2	5	3	3	4	1	1	45	4	4	7	2	3	1	1	...	8	3	8	4	36	1	1	...	3	...	...	...	6	7	10	5	3
Measles	3	...	...	...	...	2	1	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	3	...	...	1	1	1	...	...	...	...	...	...	...
Small-pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chicken-pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Whooping-cough	5	...	...	...	1	...	...	...	1	1	1	1	...	6	...	...	...	2	1	1	...	...	1	1	...	...	2	...	...	1	...	...	...	1	...	...	...	...	...
Bladder diseases	2	...	...	...	...	...	...	1	...	...	...	1	...	6	...	...	...	...	...	2	...	1	...	1	...	2	7	...	...	2	1	...	1	1	...	2	...	...	...
Bowel diseases	*154*	*4*	*7*	*7*	*9*	*2*	*10*	*36*	*36*	*26*	*12*	*2*	*3*	*157*	*3*	*4*	*4*	*4*	*6*	*5*	*18*	*52*	*32*	*17*	*4*	*8*	*145*	*3*	*5*	*4*	*4*	*5*	*3*	*32*	*53*	*23*	*4*	*7*	*2*
Bowels, Inflammation of	32	2	3	1	4	1	1	5	7	5	2	1	...	46	2	2	...	...	1	...	5	11	11	9	1	4	35	2	2	1	2	2	1	5	11	7	1	1	...
Diarrhea	14	...	...	...	1	...	...	4	2	3	4	...	...	14	1	...	1	...	...	...	...	1	5	4	...	2	7	...	...	...	...	...	...	4	1	1	...	1
Cholera infantum	49	...	1	...	...	...	2	18	19	7	2	...	...	54	...	...	...	...	...	1	9	32	12	...	...	...	73	...	...	...	1	...	...	26	36	8	1	...	1

| | | |

Comparison of the death-rates per 100,000 population from certain important diseases as enumerated by supervisors for the State of Michigan, and as immediately registered by city boards of health for Detroit and Grand Rapids, 1890–92.

Causes of death.	As enumerated by supervisors for the State of Michigan.			As registered by city boards of health.					
				Detroit.			Grand Rapids.		
	1892.	1891.	1890.	1892.	1891.	1890.	1892.	1891.	1890.
Consumption	95.9	96.7	105.4	171.7	170.2	161.3	184.7	170.6	199.1
Diphtheria and croup	60.5	62.3	83.0	204.6	169.3	243.8	74.4	144.5	194.1
Scarlet fever	20.4	18.8	10.6	92.9	32.7	18.9	10.0	33.8	11.6
Typhoid fever*	30.2	33.2	24.0	87.4	29.5	13.6	74.4	69.2	59.7
Measles	3.3	10.6	10.9	2.7	14.5	19.4	4.3	1.5	5.0
Whooping-cough	6.8	7.4	3.6	7.2	7.5	3.4	7.2	9.2	3.3
Bowel diseases	75.2	89.2	88.1	311.9	303.9	235.1	220.5	241.3	240.6
Brain diseases	70.8	75.7	73.7	165.0	140.3	150.1	153.2	190.6	147.6
Cancer and tumor	32.2	32.4	31.3	51.8	46.8	52.5	68.7	69.2	48.1
Childbirth	11.3	12.0	9.3	14.4	12.6	7.8	5.7	6.1	3.3
Convulsions	25.3	25.7	16.7	140.2	139.8	121.9	47.2	58.4	36.5
Heart diseases†	61.3	63.2	56.6	87.9	101.0	84.0	83.0	115.3	109.5
Influenza	41.8	50.5	51.8	25.2	11.7	6.8	60.1	35.3	16.6
Kidney diseases	20.4	19.1	15.8	44.2	40.2	35.0	31.5	26.1	28.2
Lung diseases‡	81.4	79.9	85.3	284.4	266.1	275.4	279.1	245.9	169.2
Pneumonia §	63.9	63.2	58.5	183.5	173.0	190.4	246.2	213.6	134.4

* Including a few deaths from "typhus" and "typho-malarial" fevers.
† Including "heart failure" in rates for Michigan; this term does not appear in the city reports.
‡ Including pneumonia, but not including consumption.
§ Including "congestion of lungs."

DEATHS BY MONTHS OF OCCURRENCE.

Tables 107 and 108 display the mortality from the most important diseases returned as causes of death in Detroit and Grand Rapids, respectively, for each month of the three years 1890-92. In some respects these tables may be regarded as the most important that appear in this report, inasmuch as they contain the first authentic information ever given in the Michigan registration reports in regard to the distribution of deaths through the months of the year. The data contained in them is based upon a system of *immediate registration*. Should there be any deficiency in the total amount of registration, that deficiency is presumably distributed over all the months of the year in a similar degree, whence the relations of the deaths in the several months of the year, as registered, are substantially the true relations. In the State system of enumeration this is known not to be the case, but, as has been explained many times in these reports,* the months of the registration year most remote from the time of enum-

* The important subject of the omissions in registration by the Michigan system, with estimations of the numbers of births and deaths unregistered for each month, was first discussed by Dr. Henry B. Baker, in the *Statistics of Michigan, 1870*, and in the registration report for the same year. Every registration report of Michigan since that time has made reference to this deficiency, whose nature and distribution, in a general way, is undoubtedly the same as theoretically concluded. Some direct light is given upon this subject in the present report by comparing deaths enumerated and deaths registered for the months of the same year in Kent and Wayne counties and Grand Rapids and Detroit, which cities constitute the major portions of the populations of these counties respectively.

eration by the supervisors in April and May of the year following show the greatest amounts of loss. The result is that all comparative statements of mortality in different months and seasons based directly upon the supervisors' returns are more or less incorrect, and it becomes difficult to make any exact study of the influence of meteorological conditions upon mortality. The population of these two cities, taken together, constitutes nearly 40 per cent of the total city population of the State, and makes up over 14 per cent of its entire population. There are, therefore, a sufficient number of inhabitants represented in these tables to enable an approximate opinion to be formed as to the true death-rate of the State from all causes, from certain specified diseases, and also in regard to the seasonal distribution of mortality. The distribution of deaths by months for the State is also introduced in the following table, the numbers being made more conveniently comparable with those of the individual counties and cities by being divided by ten.

Comparison of the deaths enumerated, by months, in the State of Michigan (one-tenth), Wayne and Kent counties for the year 1892, with the deaths registered in Detroit and Grand Rapids for the same time.*

	Year 1892.	Months, 1892.											
		Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
State*	2,173	215	169	173	188	170	148	168	194	180	189	179	195
Wayne county	3,722	306	263	307	340	330	281	393	348	254	277	292	328
City of Detroit	5,417	532	374	436	493	453	423	686	501	433	394	359	338
Kent county	1,321	154	96	92	138	88	88	120	123	119	106	79	118
City of G'd Rapids.	1,352	166	99	110	118	97	96	142	134	114	102	78	96

* For convenience one-tenth of the numbers registered for the year and months in Michigan is stated.

The remarkably high mortality in the early months of 1892 is plainly shown in the registers of Detroit and Grand Rapids, while it does not appear at all prominent in the returns by the State system. It is true that it may be inferred from the latter returns by one acquainted with the distribution of the omissions from the fact that it is very unusual—in fact, has never occurred prior to 1892—that the number of deaths returned for January should exceed those in any other month of the year. This unique character of the year was alluded to, and statements made that a reliable registration would probably show a very excessive mortality for the early part of the year, on previous pages (pp. 108 and 189), and before the distribution of deaths in Detroit and Grand Rapids, so fully confirmatory of the remarks there made, had been studied. But these statements were, of course, only general, and we cannot know the exact facts that are necessary for the satisfactory study of the relations of disease and climatic conditions until we have an accurate registration of deaths throughout the State. As shown by the following comparison, the deaths enumerated from any specified disease, e. g., consumption, appear to show the same irregularities as deaths from all causes. The inference is plain, therefore, that all direct comparisons of deaths recorded in each month from different diseases and coincident meteorological conditions are unreliable, and the tables making such comparisons in previous reports have been accordingly omitted from the present compilation.

Comparison of deaths from consumption, by months, as enumerated for the State of Michigan, and as registered for the cities of Detroit and Grand Rapids, 1892.

State and cities.	Year 1892.	Months, 1892.											
		Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
State	2,080	177	151	173	187	199	190	167	179	164	177	143	169
Detroit	381	40	24	43	37	41	22	42	23	32	31	26	20
Grand Rapids	129	14	11	11	12	8	11	14	16	11	6	4	11

LOCAL REGISTRATION OF BIRTHS.

As the system of registration of births in Detroit has only been in operation since August, 1893, the results obtained by it do not properly come within the period of time covered by this report. About 6,000 births were registered during the first year of the operation of the law. The following statement of the working of the ordinance for the collection of births in Grand Rapids is from a letter from Dr. W. A. Wilson, Secretary of the Grand Rapids Board of Health, and contains a suggestion of much value. It is only by the immediate registration of births and deaths at State expense and under State supervision that satisfactory results will be obtained.

"We believe our death registration to be absolutely correct,—no interments are allowed in our cemeteries without a permit from this department.

"Of our birth record we cannot speak with as full confidence. The general laws of the State provide for the report of births once each year by the supervisor to the county clerk, and provide compensation for the same. Our city charter gives the board of health power to 'Regulate reports of births and deaths, and provide for their registration,' but does not provide compensation for the reports. The board, through the common council, provided the ordinance under which we are now working—a copy of which I sent you.* There being no compensation provided for these reports, it has always been my opinion they were not as complete as they might be made. I suggested to Secretary Baker last year the advisability of an amendment to the State law requiring all physicians, midwives, or persons acting as such, to report all births to the local board of health of their respective cities or townships, and providing compensation for the same, said boards to report once each month to the county clerk. . . . We commenced operations on the birth record in April, 1891. Although our ordinance did not pass until October of that year, we advertised the opening of the record and asked for such reports. For the calendar year beginning May 1 to Dec. 31, 1891, we had 565 birth reports. For 1892 we had 1,462, and for 1893, to Nov. 30, 1,477. For the calendar year 1891 our death record was 1,198; 1892, 1,188, and for 1893, to Nov. 30, 1,071. This is exclusive of premature and still-births, and for 1891 and 1892 exclusive of deaths by violence."

COMPARATIVE DEATH-RATES OF AMERICAN CITIES.

In few respects have vital statistics been more abused and the deductions based upon the registration of deaths more discredited than in the death-rates occasionally set forth by local municipal authorities. There is generally a tendency to make the death-rates in the latest report—those for which the public health administration that prepares the statistics is or conceives itself to be responsible—as low as possible, while the death-rates of previous years or of other cities employed for comparison have, at least, their full value assigned. As the death-rate is a compound term depending for its value on the correct statement both of the total number of deaths and of the population from which those deaths are derived, it is easy by careless or intentional misstatement to depress the mortality below its true amount. This may be done either by understating the number of deaths, by overestimating the population, or even by making an erroneous report bearing no relation to the deaths and population. This latter *method* is possible only when the public can be depended upon to accept any figures *officially stated, without* scrutiny into the means by which they were obtained. It has

* See page 202.

been employed in this State within the present year (1894), and its results have passed without question. It would be easy to designate a number of American cities in which the mortality is regularly understated, or at least in which the results of very imperfect systems of municipal registration are set forth with all the suggestions of being the truth, and which occasionally furnish the newspaper paragrapher an item in regard to the "healthiest city" by their abnormally low death-rates.

Table 109.—*Comparative mortality of certain cities of the United States for the year ended December 31, 1892, as reported by the U. S. Marine-Hospital Bureau.*

Cities.	Population, U. S. census, 1890.	Total deaths from all causes.	Annual death-rate per 1,000 of the population.
New York, N. Y.	1,515,301	44,139	29.1
Chicago, Ill.	1,099,850	26,048	23.7
Philadelphia, Pa.	1,046,964	24,162	23.1
Brooklyn, N. Y.	806,343	20,690	25.6
Boston, Mass.	448,477	11,147	24.8
Baltimore, Md.	434,439	10,516	24.2
San Francisco, Cal.	298,997	6,477	21.7
Cincinnati, Ohio	296,908	5,979	20.2
Cleveland, Ohio	261,353	5,207	19.8
New Orleans, La.	242,039	7,467	30.9
Pittsburgh, Pa.	238,617	5,412	22.7
Washington, D. C.	230,392	6,370	27.6
Detroit, Mich.	205,876	4,958	24.0
Milwaukee, Wis.	204,468	4,442	21.7
Newark, N. J.	181,830	5,111	28.1
Minneapolis, Minn.	164,738	2,558	15.5
Louisville, Ky.	161,129	3,129	19.4
Rochester, N. Y.	133,896	2,722	20.3
Kansas City, Mo.	132,716	1,649	12.4
Providence, R. I.	132,146	2,950	22.3
Toledo, Ohio	81,434	1,627	19.9
Richmond, Va.	81,388	2,054	25.2
Nashville, Tenn.	76,306	1,587	20.7
Fall River, Mass.	74,398	1,886	25.3
Erie, Pa.	40,634	832	20.4
Portland, Me.	36,426	795	21.8
Binghampton, N. Y.	35,005	685	19.6
Altoona, Pa.	35,000	694	19.8
Mobile, Ala.	31,076	883	28.4
Galveston, Texas	29,084	713	24.5
Auburn, N. Y.	25,858	470	18.2
San Diego, Cal.	16,159	174	10.7
Pensacola, Fla.	11,750	289	24.5

The statements given in Table 109 are presented simply for the purpose of making a general comparison of the death-rates recorded for certain cities of this country and Detroit. None of the rates are accurate for no allowance has been made for increase of population from 1890 to 1892; in consequence nearly all of the rates would require to be diminished to give the true figures. The total number of deaths recorded for Detroit is nearly the same as that stated in Table 109 (not including still-births), and the death-rate to the estimated population of Detroit in 1892 (221,856) would be 22.3 instead of 24.0 as based upon the population of 1890. The rates are given as presented in the report of the United States Marine Hospital Bureau without revision in this Department.

APPENDIX.

LAWS OF MICHIGAN

CONCERNING THE

REQUIREMENT OF A CIVIL LICENSE TO MARRY,

THE SOLEMNIZATION OF MARRIAGES,

AND THE

Record, Return and Compilation of Births, Marriages, and Deaths;

WITH SUGGESTIONS TO PERSONS AUTHORIZED TO SOLEMNIZE MARRIAGES, AND INSTRUCTIONS RELATING TO THE COLLECTION OF BIRTHS AND DEATHS BY SUPERVISORS AND ASSESSORS, AND THE RETURN OF BIRTHS, MARRIAGES AND DEATHS BY COUNTY CLERKS.

LAWS RELATING TO THE SOLEMNIZATION AND RECORD OF MARRIAGES.

CHAPTER 236, HOWELL'S ANNOTATED STATUTES, 1882.

MARRIAGE AND THE SOLEMNIZATION THEREOF.

Chapter eighty-three of Revised Statutes of 1846, with amendments.*

Who shall be capable of contracting marriage.

(6209.) SECTION 1. Every male who shall have attained the full age of eighteen years, and every female who shall have attained the full age of sixteen years, shall be capable in law of contracting marriage, if otherwise competent.

Marriage is a civil contract.

(6210.) SEC. 2. Marriage, so far as its validity is concerned, is a civil contract to which the consent of parties capable in law of contracting is essential.

Who shall not intermarry.

(6211.) SEC. 3. No man shall marry his mother, grandmother, daughter, granddaughter, stepmother, grandfather's wife, son's wife, grandson's wife, wife's mother, wife's grandmother, wife's daughter, wife's granddaughter, nor his sister, brother's daughter, sister's daughter, father's sister, or mother's sister.

Ibid.

(6212.) SEC. 4. No woman shall marry her father, grandfather, son, grandson, stepfather, grandmother's husband, daughter's husband, granddaughter's husband, husband's father, husband's grandfather, husband's son, husband's grandson, nor her brother, brother's son, sister's son, father's brother, or mother's brother.

Who not to marry.

(6213.) SEC. 5. No marriage shall be contracted whilst either of the parties has a former wife or husband living, unless the marriage with such former wife or husband shall have been dissolved.†

Insane persons, etc.

(6214.) SEC. 6 No insane person or idiot shall be capable of contracting marriage. All marriages heretofore contracted between white persons and those wholly or in part of African descent are hereby declared valid and effectual in law for all purposes, and the issue of such marriages shall be deemed and taken legitimate as to such issue, and as to both of the parents.

Marriages declared valid.

Marriage, by whom solemnized.

(6215.) SEC. 7. Marriages may be solemnized by any justice of the peace in the county in which he was chosen, and they may be solemnized throughout the State by any minister of the gospel who has been ordained according to the usages of his denomination, and who is a pastor of any church or churches in this State, or who shall continue to preach the gospel in this State: (*Provided.*)‡

(6216.) SEC. 8.‡

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* For prior statutes relative to the solemnization of marriages, see Woodward Code, p. 42; Case Code, p. 111; Code of 1820, p. 259; Rev. of 1827, p. 280; Laws of 1832, p. 6; Rev. of 1838, p. 329; R. S. of 1838, p. 333.

† Act 137, Laws of 1887, prohibits divorced persons from re-marrying for a period specified in the decree, not to exceed two years.

‡ Repealed by Act 128, Laws of 1887.

No particular form required.

(6217.) SEC. 9. In the solemnization of marriage, no particular from shall be required, except that the parties shall solemnly declare, in the presence of the magistrate or minister and the attending witnesses, that they take each other as husband and wife; and in every case there shall be at least two witnesses, besides the minister or magistrate, present at the ceremony.

SEC. 10.* SEC. 11.* SEC. 12.* SEC. 13.* SEC. 14.†

Punishment of persons unauthorized, etc.

(6219.) SEC. 15. If any person shall undertake to join others in marriage, knowing that he is not lawfully authorized so to do, or knowing of any legal impediment to the proposed marriage, he shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be punished by imprisonment in the county jail not more than one year, or by a fine not less than fifty, nor more than five hundred dollars, or by both such fine and imprisonment, in the discretion of the court.

Marriage not void in certain cases.

(6220.) SEC. 16. No marriage solemnized before any person professing to be a justice of the peace or a minister of the gospel, shall be deemed or adjudged to be void, nor shall the validity thereof be in any way affected on account of any want of jurisdiction or authority in such supposed justice or minister: *Provided*, The marriage be consummated with a full belief on the part of the persons so married, or either of them, that they have been lawfully joined in marriage.

Marriages among Quakers, etc.

(6221.) SEC. 17. The preceding provisions of this chapter, so far as they relate to the manner of solemnizing marriages, shall not affect marriages among the people called Friends or Quakers; nor marriages among people of any other particular denomination having, as such, any peculiar mode of solemnizing marriages; but such marriages may be solemnized in the manner heretofore used and practiced in their respective societies or denominations.

Certificates and records made evidence.

(6222.) SEC. 18. The original certificates and records of marriage made by the minister or justice, as prescribed in this chapter, and the record thereof made by the county clerk, or a copy of such record, duly certified by such clerk, shall be received in all courts and places as presumptive evidence of the fact of such marriage.

ACT NO. 128, LAWS OF 1887.

FOR THE REQUIRING OF A CIVIL LICENSE IN ORDER TO MARRY, AND THE DUE REGISTRATION OF THE SAME, AND TO PROVIDE A PENALTY FOR THE VIOLATION OF THE PROVISIONS OF THE SAME.‡

Persons intending marriage must obtain license.

SECTION 1. *The People of the State of Michigan enact*, It shall be necessary for all parties intending to be married to obtain a marriage license from the county clerk of the county in which either the man or woman resides, and to deliver the said license to the clergyman or magistrate who is to officiate, before the marriage can be performed. If both parties to be married are non-residents of the State, it shall be necessary to obtain such license from the county clerk of the county in which the marriage is to be performed.§

Where non-residents must obtain license.

Secretary of State to furnish forms, blanks, etc.

SEC. 2. Blank forms for marriage license and certificate, as also proper books of registration ruled for the items contained in said forms, shall be prepared by the Secretary of State, and shall be furnished by him to the county clerks of the various counties of the State in quantities needed.

Form of license.

The blank forms for license and certificate shall be made in duplicate and

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* Repealed by Act 194, Laws of 1867, p. 266, Sec. 10.
† Repealed by Act No. 128, Laws of 1887.
‡ This act went into effect September 27, 1887.
§ This section, being Act No. 256, Laws of 1889, went into effect July 3, 1889.

shall provide spaces for the entry of the following items, to wit: The full name, age, color, place of residence, place of birth, occupation, and if known, the father's name, and mother's maiden name, of each of the parties to be married; the number of times either of the parties may have been previously married; the bride's maiden name, in case she is a widow; the date of the giving of the license; the signature of the county clerk; the date and place of the marriage, the names and residences of two witnesses to the marriage, and the certification of the officiating clergyman or magistrate, that the marriage contemplated by the license has been performed by him. And the Secretary of State shall furnish to the county clerks of the various counties of the State, blank forms of affidavit, containing the requisite allegations, under the laws of this State, of the competency of the parties to unite in the bonds of matrimony, and any party applying for license to marry, shall cause such an affidavit to be made and filed with the county clerk, as a basis for the issuing of the license; and such affidavit together with the license, shall be made a matter of record of said clerk's office.

Secretary of State to furnish to county clerks blank forms of affidavits, etc.

SEC. 3. It shall be the duty of the county clerk, on application being made to him, to fill out the blank spaces of the license according to the sworn answer of the applicant taken before him or some person duly authorized by law to administer oaths. If it shall appear that the parties are legally entitled to be married, the county clerk shall sign the license in certification of the fact, that it is properly issued, and he shall make a correct copy thereof in the books of registration. For his services connected therewith he shall be entitled to a fee of fifty cents, to be paid by the party applying, and at the time of the issuing of the license. He shall give the license, thus filled out and signed by him, together with the blank form, of certificate, to the party applying for delivery to the clergyman or magistrate who is to officiate at the marriage. On the return of the license to the county clerk (as specified in section four, below), with the certificate of the clergyman, or magistrate, that the marriage has been performed, he shall record in the book of registration, in their proper places of entry, the date and place of the marriage, the names and residences of two witnesses to the marriage, and the name of the officiating clergyman or magistrate. All licenses and certificates so issued and returned shall be preserved on file in the office of the county clerk, and he shall, as often as once in three months, make a faithful report to the Secretary of State of all licenses and certificates issued and received by him.

Duty of county clerk.

Fees.

Licenses and certificates, where filed, etc.

SEC. 4. It shall be the duty of the clergyman or magistrate, officiating at a marriage to fill out the spaces of the certificate left blank for the entry of the time and place of the marriage, the names and residences of two witnesses, and his own signature in certification that the marriage has been performed by him. He shall separate the duplicate license and certificate and retain one-half for his own record, and he shall return the other half within ten days to the county clerk issuing the same.

Duty of officiating clergyman or magistrate.

SEC. 5. Any county clerk who shall refuse to give a license to persons properly applying and legally entitled to be married, or who shall violate any of the provisions of this act, shall be adjudged guilty of a misdemeanor, and shall be punished by a fine of not less than twenty-five dollars or more than one hundred dollars, or in default of payment thereof by imprisonment in the county jail for a term of thirty days.

Penalty for violating act by county clerk.

SEC. 6. Any clergyman or magistrate who shall join together in marriage parties who have not delivered to him a properly issued license, as provided for in this act, or who shall violate any of the provisions of this act, shall be adjudged guilty of a misdemeanor, and shall be punished by a fine of one hundred dollars, or, in default of payment thereof, by imprisonment in the county jail for a term of ninety days.

Penalty for violation by clergyman, etc.

SEC. 7. Any person whose duty it shall be to return a marriage certificate to the county clerk, who shall neglect to return said certificate, shall be adjudged guilty of a misdemeanor, and shall be punished by a fine of not exceeding one hundred dollars or ninety day's imprisonment, or both in the discretion of the court.

Penalty for neglect to return certificate.

SEC. 8. Any person applying for a marriage license who shall swear to a false statement therein, shall be guilty of perjury and shall be prosecuted therefor under the general laws of the State.

False swearing, in application, perjury.

Filing and recording of reports.

SEC. 9. All reports of marriage, sent by the county clerks of the various counties of the State to the office of the Secretary of State, shall be preserved on file in that office, and a proper record thereof shall be made and kept.

Records of license, etc., *prima facie* evidence.

SEC. 10. The record of any license to marry, or of any marriage certificate in any county clerk's office, or a certified copy thereof, shall be *prima facie* evidence in any court or proceedings in this State, with the same force and effect as if the original were produced, both as to the facts therein contained and as to the genuineness of the signatures thereto.

Acts repealed.

SEC. 11. All other acts and parts of acts which are inconsistent herewith are hereby repealed.

LAWS RELATING TO THE REGISTRATION OF BIRTHS AND DEATHS.

CHAPTER NINETY-THREE OF HOWELL'S ANNOTATED STATUTES.

AN ACT TO PROVIDE FOR THE REGISTRATION OF BIRTHS, MARRIAGES AND DEATHS, BEING ACT NO. 194 OF 1867, AS AMENDED BY ACT NO. 125, OF 1869.*

(858.) SECTION 1. *The People of the State of Michigan enact*, That it shall be the duty of the supervisor of each township, and the supervisor or assessor of any city or ward therein, in this State, between the tenth day of April and the first day of June, in the year eighteen hundred and sixty-nine, to ascertain by actual inquiry or otherwise, of the inhabitants thereof, the births and deaths which have occurred in their respective townships, cities or wards, from and including April fifth, eighteen hundred and sixty-eight, to and including December thirty-first, eighteen hundred and sixty-eight, together with the facts relative thereto, as are hereinafter provided for, and shall make an accurate return thereof to the clerk of the county in which such township or city is situated, on or before the first said day of June; and for such service shall receive ten cents for each birth and death so returned by them to be paid by the county in which such returns are made. In the year eighteen hundred and seventy, and in each and every year thereafter, it shall be the duty of the officers above mentioned, between the tenth day of April and the first day of June, to ascertain, by actual inquiry or otherwise, of the inhabitants thereof, the births and deaths which have occurred in their respective townships, cities, or wards, during the year ending on the last day of the preceding December, and shall make the return and receive therefor the compensation above provided for: *Provided*, That in the city of Detroit, the duties required by this act to be performed by supervisors and assessors shall be performed by persons appointed by the common council for that purpose; and it shall be the duty of the common council on or before the tenth day of April, in each year, to appoint such number of persons in each ward of said city as shall be necessary to perform said duties within the time limited by this act; and such person shall possess all the authority conferred upon, and perform all the duties required of supervisors and assessors by this act, within the territory assigned them, respectively by the common council, and shall receive such compensation for their services, not exceeding the sum allowed by this act to supervisors and assessors, as shall be fixed by the common council, to be paid by the county of Wayne, and shall be liable to the same penalties for refusal or neglect to perform any of said duties.

Duties of supervisors and assessors.

In 1869 returns to be made from April 5 to Dec. 31, 1868.

Return to county clerk.

In 1870 and thereafter.

Returns to include from January to December last preceding.

Proviso relative to the city of Detroit.

Persons to be appointed by common council.

Compensation of persons so appointed. How paid. Penalties.

(859.) SEC. 2.†

* See Act No. 128, Laws of 1887, printed herewith, for registration of marriages

† Section 2 relates solely to the old method of marriage returns.

County clerks; duties of.

(860.) SEC. 3. It shall be the duty of the county clerks of the several counties of this State, on receiving the returns of such births, marriages, and deaths to record the same at length in separate books, to be provided at the expense of the State by the Secretary of State, for that purpose, with proper indexes thereto. The births, marriages, and deaths shall be numbered and recorded in the order in which they are received by the clerk, and the record of marriages shall be indexed, using both the name of the bridegroom and bride. The record of births shall state, in separate colums, the date of the birth, the name of the child (if it have any), the sex and color of the child, the place of birth, the christian and surname of both parents, the residence and nativity of the parents, the occupation of the father, and the date the record was made: *Provided*, That in case the child has no christian name, such name shall be obtained and reported to the county clerk in the next annual report of the supervisor or assessor, and such christian name shall be distinctly designated in such report as the christian name belonging to a child previously reported, and shall be properly entered by said county clerk, in the blank left for such christian name in his book of record; and it shall be the duty of the several county clerks, on or before the tenth day of April in each year, to give to the officers required to make the said returns, lists of such children whose christian names have not been previously reported in their respective towns, cities, or wards. The record of marriages shall state, in separate columns, the date and place of marriage, the christian and surname of the bridegroom and bride, and the maiden name of the bride, if a widow, the color, age, and place of birth of each, the residence of each at the time of marriage, the occupation of the bridegroom, and the name and official station of the person by or before whom they were married, the names and residences of at least two witnesses present at such marriage, and the date when such record was made.† The record of deaths shall state in separate columns, the date of the death, the christian and surname of the deceased, the sex and color, whether married or single, the age in years, months and days, the place of death, the disease or apparent cause of death, the nativity of the deceased, and the occupation, if any, and the names, residence of the parents, if known, and the date when such record was made. The clerks of the several counties shall annually, on or before the first day of September make and transmit to the Secretary of State, a certified copy of the records of his office, of all the births, marriages,* and deaths reported in their respective counties for the year ending December thirty-first, last preceding. And each county clerk shall receive for the record of each birth and death in his office three cents, and three cents for each birth, marriage, and death, returned by him to the Secretary of State, to be paid by the county, and shall be compensation in full for all services required by this act to be performed by him.

Births, marriages and deaths to be numbered and indexed.

Record of births shall state.

Proviso.

Record of marriages shall state.

Record of deaths shall state.

Return of county clerk.

Compensation.

Secretary of State shall furnish all blank books, blanks, instructions, etc.

(861.) SEC. 4. The Secretary of State shall prepare and furnish to the county clerks of the several counties in this State, blank books of suitable quality and size, with proper rulings and headings, to be used as books of record, in carrying into effect the provisions of this act. He shall also prepare and furnish blank "forms of returns," as hereinbefore specified accompanied with such instructions and explanations as may be necessary to insure uniformity in such returns, which blanks shall be forwarded to the several county clerks on or before the first day of March in each year; and the said county clerks shall deliver the same to the supervisors or assessors of the several townships, cities or wards therein, in their respective counties, on or before the tenth day of April.

Returns to be bound and indexed.

(862.) SEC. 5. It shall be the duty of the Secretary of State to receive the returns made in pursuance of the third section of this act, and he

* Amended by Act 128, Laws of 1887, which see on previous pages for amended provisions in regard to marriages.

NOTE ON SECTION 5.—Act No. 194, Laws of 1867. In accordance with the provisions of this section, the early Registration Reports were prepared under the supervision of representatives of the State Medical Society, as follows: 1867, Dr. I. H. Bartholomew; 1868, Dr. George E. Ranney; 1869, 1870, Dr. Henry B. Baker. Under Section 10, Act No. 81, Laws of 1873, which provided that "The Secretary of State Board of Health shall be Superintendent of Vital Statistics. Under the general direction of the Secretary of State, he

shall cause the same for each year to be bound together, in one or more volumes, at the expense of the State, and make indexes thereto; and with such assistance as may be voluntarily rendered by any authorized committee appointed by the medical faculty of the University of Michigan or by any regularly authorized medical society in this State, for that purpose, he shall prepare such tabular statements, results, and deductions therefrom as will render them of practical utility, and make report thereof, annually, to the Governor of the State, which report may be ordered published and distributed in such manner as the Legislature may from time to time direct.

Secretary of State to make annual report.

Neglect to keep records.

(863.) SEC. 6. Every justice of the peace, minister of the gospel, and all other persons authorized by the laws of this State to solemnize marriages, and clerks or keepers of records of the meetings in which any marriage among the Friends or Quakers shall be solemnized, who shall neglect or refuse to make a record of such marriage, or to deliver to the county clerk of the county in which the marriage took place, a certified copy of such record, or who shall refuse, on demand, to deliver to the parties to such marriage the certificate thereof, as required by section two of this act, or who shall willfully make a false or fictitious entry in his record of marriages or in the certified copy of such record delivered to the county clerk, or in the certificates of marriages, delivered to the parties thereto, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by fine not exceeding one hundred dollars, and in default of paying the same, shall be imprisoned in the county jail of the county in which such conviction shall be had, until said fine be paid, but not to exceed the period of ninety days."

Neglect to deliver certificates.

Penalty.

Certificate of death.

(864.) SEC. 7. Every physician, surgeon, or midwife, who shall have been in attendance upon any deceased person, shall, upon application of any supervisor or assessor of the township, city, or any ward thereof, in which such death occurred, make out and deliver to such supervisor or assessor a certified statement, without fee, containing the name of the disease, or cause (if known), producing the death of such person; and any medical attendant who shall neglect or refuse to give such statement, or who shall willfully make a false statement in relation to such death, shall for such offense be liable to pay a fine of not less than ten nor more than fifty dollars, and the costs of prosecution, which fine the said supervisor or assessor is hereby required to sue for and collect, in his official character.

Refusal to make certificate.

Penalty.

Facts to be obtained by supervisor.

(865.) SEC. 8. It shall be the duty of each supervisor or assessor to obtain the facts in relation to births and deaths within his township, city or any ward therein (not otherwise obtained), from the heads of families, the keepers, overseers, or superintendents of asylums, hospitals, jails, prisons, workhouses, almshouses, houses of correction and similar institutions, the keepers of hotels, public and private boarding houses, and the masters or chief officers of steamboats and sail vessels, navigating any of the waters of this State, and touching at any port of entry therein, in which such births or deaths occurred; and if either of the above named persons shall refuse to give such information, then the same shall be obtained by such supervisor or assessor from any person having a knowledge of the facts in relation to such birth or death; and if the supervisor or assessor shall have reason to believe that any person or persons willfully misrepresented or concealed any facts relative to such birth or death in his township, city, or any ward therein, which he cannot otherwise obtain, he may examine such person or persons on oath (which oath such supervisor or assessor is hereby empowered and authorized to administer), in relation to any birth or death within his township, city, or any ward therein, of which such person or persons may have any knowledge or information; and if any person, after being duly subpœnaed (as pro-

Refusal to furnish.

Obtained under oath.

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shall collect these statistics and prepare and publish the Report required by law relating to births, marriages and deaths," the Reports for the years 1871 to 1880, inclusive, were prepared under the supervision of Dr. Baker, as Secretary of the State Board of Health. Act No. 107, Laws of 1883, amended the preceding section to read as follows: "The Secretary of the State Board of Health may publish in his Annual Report such information, or statistics as is provided for in this act," since which time the Registration Report has been prepared entirely by the Department of State.

Neglecting to answer a subpœna.

vided for compelling the attendance of witnesses in justices' courts) by such supervisor or assessor, for the purpose aforesaid, shall neglect or refuse to appear before such officer, or, appearing, shall refuse to be sworn and testify in relation to such matter, he shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished

Penalty.

therefor by a fine not exceeding fifty dollars, and in default of paying the same shall be imprisoned in the county jail of the county in which such conviction shall be had, until said fine be paid, but not exceeding ninety

Perjury.

days; and any person who after being duly sworn as aforesaid, shall willfully make any false statement in relation to any birth or death, about which he is required to testify, shall be deemed guilty of willful and corrupt perjury: *Provided*, That no person shall be required to answer any

Proviso.

question which will tend to criminate himself or herself upon any such examination.

Neglect to perform duties.

(866.) SEC. 9. In case of the refusal or neglect by any of the officers mentioned in this act, to perform any of the duties hereinbefore required of them or either of them, to be done and performed by any of the pro-

Penalty.

visions herein contained, such officer shall be liable to a fine not to exceed one hundred dollars, and the costs of prosecution; and the prosecuting attorney in each county is hereby required to prosecute, in the name of the people of the State of Michigan, all persons in his county who shall

Misdemeanor.

willfully violate any of the provisions of this act; and the said supervisor or assessor of any township, city, or any ward therein, may be prosecuted for a misdemeanor under the section, and upon conviction, punished as therein provided for.

SUGGESTIONS TO PERSONS AUTHORIZED TO PERFORM MARRIAGES IN MICHIGAN.

A thorough knowledge of the law concerning the solemnization and return of marriages in Michigan is necessary to a correct performance of the duties of persons authorized to solemnize marriages.

The most frequent violation of the law is in the marriage of persons *under the lawful age*, which is, for males, eighteen (18) years, and for females sixteen (16) years. See Section 6209, Howell's Annotated Statutes, 1882, printed on a previous page. The penalty for the violation of this provision is a forfeit of not exceeding one hundred (100) dollars. See Section 6, Act 128, Laws of 1887, printed on a previous page.

In the record and return of marriages, every item specified in the law should be carefully ascertained, and correctly and plainly written. No item should be omitted, and nothing taken for granted, as is often the case with the fact as to COLOR of persons married.

In recording the BIRTHPLACE of each, the State, or country should be distinctly given in each case. This will avoid the difficulty of ascertaining the nativity of persons whose birthplace is returned "Holland," "Hanover," "Denmark," "Wales," "Paris," etc.,—names of places which may be either in the United States or Europe. If such or similar names occur, please state whether it is Holland, *Michigan*, or Holland, *Europe*, and so for each case. Never return the birthplace "America," as we cannot know whether it is in the United States, and are therefore compelled to compile it with the "Unknown."

Blanks for the return of marriages to the county clerk are not required under the present law, as the return of the license with the certificate properly filled out constitutes the proper return to the county clerk.

The license to marry can only be procured from the several county clerks, but the affidavit necessary to procure the same may be made before any person authorized to administer oaths, and blank affidavits can be had from any county clerk or from the office of the Secretary of State.

CIRCULAR OF INSTRUCTIONS RELATING TO THE COLLECTION OF BIRTHS AND DEATHS BY SUPERVISORS AND ASSESSORS.

The following circular is presented for reference on the part of those entrusted with the collection of the data on which the Vital Statistics relating to births and deaths in this State are based. It incidentally throws much light on the character of the large number of faulty and indefinite returns of causes of death annually received, many of which a few intelligent questions on the part of the enumerating officer would put into satisfactory shape.

Some criticism may be made, and with a certain degree of truth, that these instructions leave many points unasked for upon which specific information would be very desirable. It must be remembered that the entire enumeration is made by persons unfamiliar with medical terms, and that any improvement in the fullness and accuracy of the causes of death returned can only be made by very slow degrees. An attempt to make any marked changes, as, for instance, to distinguish primary and secondary causes of death, would, by causing uncertainty and confusion in the minds of the enumerators, defeat its purpose and produce even less satisfactory results than obtained at present. Until a system of registration is adopted in which the returns of causes of death are drawn directly from certificates issued by the medical attendants, the best results cannot be obtained.

[Please preserve this circular for reference.]

MICHIGAN,
DEPARTMENT OF STATE.

INSTRUCTIONS FOR ENUMERATION OF BIRTHS AND DEATHS.

To Supervisors and Assessors:

1. You are required to ascertain by actual inquiry or otherwise, the births and deaths that have occurred in your township, city or ward during the year ending December 31, 1893.

2. Your County Clerk has been supplied with the proper blanks for this purpose. He will deliver them to you on or before the *tenth day of April.* Examine the forms carefully and read the special directions printed thereon. They are substantially as follows and should be strictly followed:

3. *This return is to be made between the tenth day of April and the first day of June, 1894.*

4. *A return should be made to the County Clerk by every supervisor or assessor*

whether any births or deaths have occurred in the township or ward or not. This is necessary in order to show that the enumeration has been performed in every township or ward.

5. **Be very particular to fill all the blanks.**

6. **Never use ditto marks or dashes. Every item should be written out in full.**

7. *When the item called for cannot possibly be ascertained, write in such space the word "Unknown" to show that the item has not been overlooked.*

8. *All names of persons and places should be plainly written and correctly spelled.*

9. See that the County, Township, Year, Signature and Official Station of the enumerator are filled in before sending the returns to the County Clerk.

10. Occupations should be stated for both sexes whenever possible.

11. If, in any instance, a birth or death be returned which did not occur in your own county, the name of the county should be given; if not in this State, the State should be given; if in towns with such names as "Holland," "Denmark," "Wales," "Berlin," etc., designate whether United States or foreign, by giving county or State, or by writing "Europe." Where there is a township and village or city of the same name, state which it is, in order to make possible the compilation by cities or villages.

12. **Every still-birth should be reported as a birth and as a death.** See directions for reporting in deaths on reverse side.

13. Instructions relating to the correct return of the cause of death are given on the back of this circular. Supervisors should exercise especial care to obtain correct and definite information under this head, as the returns have hitherto been very defective.

14. *In cities where burial permits are required*, and a register of deaths is kept, the enumerators should by all means use this in preparing their returns. These registers are kept as a rule in the offices of the city clerks, health officers, or superintendents or sextons of cemeteries. It may be necessary to obtain certain additional information to that found on these registers in some cases by personal inquiry, but for the main facts —number of deaths, dates, causes of death, etc.,—such registers, if well kept, are far more reliable than any information to be gained by personal inquiry of the friends of decedents. In the matter of causes of death this is especially true, and the statements of the city registers, when based upon certificates of death, should be implicitly followed. Supervisors should note on their returns the fact that they are copied from registers of deaths, when such is the case, in order that proper value may be attached to them in compilation.

15. Lastly, *read the law* providing for the registration of births and deaths: Act No. 194 of 1867, as amended by Act No. 125 of 1869, Howell's Statutes, sections 858 to 866, or Michigan Township Officers' Guide, sections 581 to 585. The law will also be found printed in the Appendix of the Registration Report, which may be had of the County Clerk or of this Department upon application, and an extract from it is printed on the back of the blanks.

Respectfully,

WASHINGTON GARDNER,
Secretary of State.

Lansing, March 22, 1894.

[Reverse side.]

DIRECTIONS FOR MAKING CORRECT RETURNS OF THE CAUSE OF DEATH.

It is of great statistical importance that supervisors make a correct return of the cause of death in the case of every death registered by them, so far as they may be able to ascertain that fact. For this reason the law provides that the physician last in attendance upon any deceased person shall furnish to the supervisor, upon his request, a certified statement of the cause of death, and it is to be regretted that they are not more frequently called upon for such statements. As a rule the information reported is derived from the statements of the family or friends of deceased persons, and the information thus obtained should be stated without material modification, except that, when the statements made are quite indefinite and unsatisfactory, the enumerator should endeavor, by inquiry, to obtain a more satisfactory return, and, **in every case, to ascertain the name of the disease that actually caused death, if known.**

The following suggestions relating to the most common varieties of unsatisfactory returns of the cause of death, are given with the hope that supervisors will exercise special care and make such further inquiries as may be necessary to secure definite statements in cases where these indefinite replies are made. In no such case is it desired that the supervisor shall attempt to supply any facts from conjecture, or make

definite from supposition any return that, after his best efforts at obtaining the information, remains unsatisfactory. With the greatest pains, there will be uncertainty in many cases, whether from doubtful diagnosis or otherwise, and nothing more can reasonably be expected than that the cause of death be reported as fully as known.

1. Do not return deaths from "Debility," "Exhaustion," "General Debility," "Weakness," and the like, if the cause that produced such conditions can be learned. Name the *disease* that caused death, if known.

2. Do not return deaths from "Old age" or "Infancy," if the disease that produced death in the aged person or infant in question can be ascertained. Remember that old age is not a disease. The aged are subject to diseases, which should be definitely named in the registry of death, if possible. The statement of the exact age of the decedent, as given in another column, conveys all the information necessary in regard to the fact of advanced years, as modifying the course of, or predisposing to, certain diseases.

3. Deaths from "Hemorrhage" or "Inflammation" should always specify the part of the body affected, if known. Thus "Inflammation of lungs" is a complete and satisfactory return, while "Inflammation," standing alone, is practically equivalent to "Unknown." Care should also be taken to specify what portion of the body was affected in deaths from cancers or tumors.

4. Returns stating the part of the body affected but not the nature of the disease, should be made only when the name of the disease that caused death cannot be ascertained. Thus "Lung disease" is a more satisfactory report than "Unknown" in a case of consumption, but a return of "Consumption" would be far more proper than either, this being the actual cause of death. Always ask for further information when such replies are made as "Lung disease," "Bowel disease," "Brain disease," and the like.

5. In deaths from fevers, the kind of fever should always be specified, if it can be ascertained. The expressions "Typhoid fever" or "Malarial fever" are definite; "Fever" is quite indefinite, nevertheless it will frequently be impossible to obtain a more complete return, and the enumerator will be compelled to give the cause of death as stated to him in such case.

6. The term "Heart failure" should rarely, if ever, be returned as a cause of death without further explanation. In deaths from acute infectious diseases, as from diphtheria, scarlet fever, typhoid fever, etc., the immediate cause of death may be heart failure; in such cases the disease in the course of which the heart failure occurred should always be named, as "Heart failure after diphtheria." If the heart failure be understood as due to actual heart disease, the latter should be named as the cause of death. But in the great majority of cases so returned to this office, the term is evidently used so loosely as to possess very little meaning. Supervisors should avoid and discourage such indiscriminate use of the expression in making out their reports.

7. "Convulsions," "Cramps," "Fits," "Spasms" are all unsatisfactory terms, which should not be employed provided the actual cause of death can be discovered. Name the disease that caused death, *not merely the symptoms* of that disease.

8. "Dropsy" is not a satisfactory term, but you will frequently be obliged to accept it. Endeavor to ascertain the disease that caused the dropsy, e. g., heart disease, Bright's disease, etc., and include it in your return.

9. In all deaths from violence specify in the record (1) whether accidental, homicidal or suicidal; (2) the means of death, as drowning, shooting, poisoning, etc. In the case of death from poison the kind used should be specified.

10. **Every still-birth should be reported as a birth and as a death.** A still-born child is one *born dead*, not one that died after birth. For those that lived an appreciable time, however brief, after birth, another cause of death should be assigned.

11. In deaths from influenza (la grippe) specify the mode of death when known, as "Pneumonia following la grippe." This is more valuable than the return of the death simply ascribed to the influenza, without hint of the manner in which the death took place.

CIRCULAR OF INSTRUCTIONS RELATING TO THE RETURN OF BIRTHS, MARRIAGES AND DEATHS BY COUNTY CLERKS.

Careful observance of the following directions by county clerks will greatly facilitate the work of compilation of the returns in this Department, and lead to increased accuracy of the records. No detail is too trifling to be observed in preparing these returns if its neglect is likely to lead to misunderstanding and ambiguity in regard to the facts registered. It is especially important that county clerks use every effort to obtain correct information from supervisors in case of omissions in their returns, and that they be fully instructed as to the necessity of filling every blank space in the forms provided for their use. Much time is wasted every year in writing for omissions that would have been detected by the careful comparison of the record and transcript before the transmission of the latter to this Department.

County clerks are urged to comply strictly with the law which requires their returns to be forwarded by September 1, of each year. There is no necessity of delaying until that time, and in fact many County clerks make full returns in July. There is no reasonable excuse for delay beyond the prescribed time, for it is expressly requested that no delay be made on account of delinquent townships, but that the supervisors of all townships who have not complied with the State law be reported to this Department.

[Please preserve this circular for reference.]

MICHIGAN,
DEPARTMENT OF STATE.

INSTRUCTIONS FOR MAKING RETURNS OF BIRTHS, MARRIAGES AND DEATHS.

To County Clerks:

In transmitting blanks for the registration and return of births, marriages and deaths to this Department, it is proper to call attention to certain particulars which should be observed in preparing the returns.

1. *Careful examination should be made of the returns immediately upon their receipt from the supervisor*, and if omissions be observed the attention of the supervisor should be called to them at once. If necessary, they should be returned to the supervisor for correction. *County clerks should also notice whether any townships fail to make reports*, or whether any large and populous townships report an absurdly small number of births or deaths. The average birth-rate for the State, according to the present returns, which are much below the true figures, is 23.7 per 1,000 inhabitants. The average death-rate is 10.3. Any returns that fall greatly below these figures may

be regarded with some suspicion as not being perfect. By a little attention to these matters on the part of county clerks, many delinquent returns may be properly brought in, and much correspondence for corrections will be rendered unnecessary.

2. The returns should not be delayed in order to obtain the omissions noted above. *Send them in, whether complete or incomplete, promptly on September 1.* Notify us at the same time of any delinquent townships and of any efforts on your part to complete their returns, and further inform us promptly as soon as such delinquent townships make their returns.

3. No returns should be sent to this department until they have been carefully compared with the records. *Never use ditto marks or dashes in preparing the transcript.* Each space on the blanks requires a separate word or words to be inserted, and the use of symbols of repetition leads to much inaccuracy and confusion.

4. In the returns of births, write the name of, and other facts concerning the mother, immediately under that of the father; and in marriages, write the name, etc., of the bride, immediately under that of the bridegroom, *not* leaving a blank space between the parties to the same birth or marriage.

5. *Marriages should be sent in promptly at the end of each quarter.* The quarters end on March 31, June 30, September 30, and December 31. *Also keep a list of all marriages for which the return of marriage has not been previously sent in to this department, the license having been issued in some previous quarter or year, and send a full transcript of the same with your next quarterly report.*

6. Letters calling for *corrections* of the returns will be sent out from this office, in the case of marriages as soon after the receipt of the returns for the first quarter of the following year as the examination can be made, and in the case of births and deaths immediately upon their arrival at this office. County clerks are requested to carefully examine their records (if necessary, referring directly to the supervisor), and *promptly supply the information required.*

7. County clerks should be particular to sign the returns in the space provided for that purpose *on each page.* The name of the county, year, etc., should always be properly inserted.

8. In transmitting, please roll the blanks, not fold them. A receipt is sent from this office as soon as received. In case of its non-arrival, notify the department in order that the returns may be traced, if necessary.

Very respectfully,

WASHINGTON GARDNER,
Secretary of State.

Lansing, March 22, 1894.

INDEX.

INDEX.

ABBOTT, M. D., SAMUEL W.—
classification used by, in Massachusetts report, 1887 184
comments of, on Dr. Farr's system of classification 185

ABORTION—
number deaths from, 1892 202
compared with 1891 and average for 5-year periods, 1871-90 234
number deaths from, by age and months, 1892, and by years, 1887-92 242

ABSCESS—
number deaths from, 1892 205
by sex, age and months, 1892, and by sex, 1887-92 236
of various organs. See *Bowels, Brain, Kidneys, Liver, Lungs, Spine, Stomach* and *Uterus* in Table 90.

ACCIDENTS—
death-rate from, in Michigan, by 5-year periods, 1871-90, compared with Massachusetts and England 210
total deaths from, 1892, specifying causes 214
number deaths from, by counties, 1892, specifying causes 215
by sex, 1892 217
by poison, 1892, showing drug taken and number adult and infant decedents 219
on railroads, 1892 220
report of Railroad Commissioner more accurate 220
rate of deaths from, increasing 220
on railroads, 1891-2, showing manner of accident, passengers and employés killed and injured 220
1883-92, showing passengers carried, employés and others killed and injured 221
to railroad employés, 1892, showing class, and death and injury rates 221
comparison of death-rates from, on railroads, by classes and employés 222
number deaths from, 1892, caused by horses and vehicles 222
description of 222
number deaths, 1892, from miscellaneous casualties 223
description of 222
number and rate of deaths from, 1892, compared with 1891 and averages for 5-year periods, 1871-90 ..... 229, 234
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 236
See *Violence.*

ADDISON'S DISEASE—
number deaths from, 1892 205

AGE—
summary of, as to persons married, 1892 81
as to persons married below legal age, 1892 81
table showing average, by nativity of persons married, 1892, compared with other years 89
of persons married, 1892, and proportion at each age 98
table showing by sex in periods of years number decedents, 1892 130
average at death by nativity, 1892, still-births excluded 143
number deaths, 1892, under one year, by months, sex and age in months, and month and year of birth, still-births included 144
number deaths under one year of age, 1891-2, of births, 1891, by sex, and months of birth, giving percentage of total births, still-births included 147
months of births and death, of births, 1891, dying under one year, giving percentage, still-births included 148
relation by months and sex of deaths under one month to births, 1892, still-births included .. 149
death-rates by nativity and periods of 156, 157
comparison of deaths, 1892, with estimated population by nativity, showing rates per 1,000, still-births excluded 157
distribution varies widely by geographical divisions 182
important in certain diseases 182
under 5, rate of deaths, 1892, lowest of registration 188
between 5 and 14, rates of deaths, 1892, lowest of registration 158
death rates, 1892, in youth, middle age and early advanced age, not excessive 188
over 65, rate of deaths, 1892, highest of registration 188
of decedents, showing number deaths by age, sex, causes and months, 1892, and by sex and causes, 1887-92 235

AGE—*Continued:*
average, of decedents, 1892, by occupations, compared with previous years ... 270
discussion of ... 270
classes of decedents showing high and low average age at death ... 271
Table 103, showing age by classified occupations ... 272

AGUE—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 230

ALABAMA—
English registrar-general's arrangement of causes of death adopted by ... 184
death-rates in, 1888-92, compared with other states, United States and foreign countries ... 207
death-rates from consumption in, 1880-92, compared with Michigan, other states, United States and England ... 211
diphtheria and croup ... 212
typhoid fever ... 212
scarlet fever ... 213

ANÆMIA—
number deaths from, 1892 ... 205
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 231
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 237

ANEURISM—
number deaths from, 1892 ... 205
number and rate of death from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 232
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 237

ANGEL, WM. N.—
authority for information as to registration of deaths and burial permits in Grand Haven ... 289

APOPLEXY—
number deaths from, by sex, age and months, 1892 ... 166
by counties, 1892 ... 170
by years, 1869-92 ... 178
in 1892, and discussion of ... 200
number and rate of death from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 231
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 237
See *Brain.*

APPENDICITIS—
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 237

ARTERIES—
disease of, number deaths from, 1892 ... 205
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 237

ARTHRITIS—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 233

ASCITES—
number and rate of death from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 232

ASSESSORS—
circular of instruction relating to collection of birth and death statistics ... 336

ASTHMA—
number deaths from, by age, sex and months, 1892 ... 166
by counties, 1892 ... 170
by years, 1869-92 ... 178
in 1892, and discussion of ... 204
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 232
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 237

ATMOSPHERIC PRESSURE—
average by year and months, 1892, compared with 1890, '91, and 1877-90 ... 270
average daily range of, 1892, compared with 1890, '91, and 1882-90 ... 270
See *Climatic Conditions.*

ATROPHY—
progressive muscular, number deaths from, by sex, age and month, 1892, and by sex, 1887-92 ... 237

ATROPHY AND DEBILITY—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 234

AUSTRALIA—
vital statistics of, importance of ... 34
to be compared with Tables 7, 8 and 9 ... 34
population of ... 34
marriage-, birth- and death-rates of, 1882-91 ... 34
decline in ... 35
comparison of death-rate with Michigan ... 35

AUSTRIA—
table showing persons married per 1,000 living population ... 16
births registered per 1,000 living population ... 17
deaths registered per 1,000 living population ... 18
death-rates in, 1880-92, compared with other foreign countries and certain states ... 207

BAKER, M. D., HENRY B.—
system of, for correcting defective returns of vital statistics ... 4
omissions in registration returns, first discussion of, by ... 320
registration reports prepared by, 1869-80 ... 333

BARTHOLOMEW, M. D., I. H.—
registration report prepared by, 1867 ... 333

BELGIUM—
number persons married per 1,000 living population ... 16
births registered per 1,000 living population ... 17
deaths registered per 1,000 living population ... 18

BILIARY CALCULUS—
number and rates of deaths from, 1892, compared with 1891, and average for 5-year periods, 1871-90 ... 233

BILIOUS FEVER—
number deaths from, 1892 ... 202
by sex, age and months, 1892, and by sex, 1887-92 ... 247

BILLINGS, M. D., JOHN S.—
estimate by, of deficiency in enumeration of deaths in United States and Michigan ... 3
comments of, on diminishing birth-rate in United States ... 40
estimate of, of death-rate in United States, 1890 ... 207

BIRTHS—
defects in law requiring registration of ... 1
number of, not returned ... 1
consequences of ... 1
number of, reported, 1892 ... 1
per 1,000 population ... 2
number reported, 1892, inaccurate ... 3
allowance for delinquent returns ... 3
probable number of, 1892 ... 3
per 1,000 population ... 3
reasons why reports of, inaccurate ... 3
enumeration instead of immediate registration ... 3
immediate registration recommended by national census ... 3
fraudulent returns of, in cities ... 4
number of, 1892 ... 6
average per quarter, month, week, and day ... 6
excess over deaths ... 6
decrease in rates ... 6
fraudulent returns of, 1887-91 ... 6
estimated number of ... 6
number of, 1867-86 ... 7
excess over deaths ... 7
percentage of deaths to ... 7
1892 shows decrease ... 8
previous returns fraudulent in Wayne county ... 8
effect of divorces on marriage and birth-rates ... 8
number of, in Wayne county and Detroit, 1880-92 ... 8
per 1,000 population ... 8
number of, considered fraudulent ... 8
reasons why ... 8
probable number of ... 9
comparison of, to population, showing ratio ... 9
number of, 1867-92 ... 13
per 1,000 population ... 13
excess over deaths by years ... 13
percentage of deaths to ... 13
fraudulent returns from Wayne county, estimated correction of ... 14
birth rate per 1,000 population, as corrected ... 14
natural increase in, from census returns, 1870-90 ... 14
rates per 1,000 from United States and state censuses ... 14
number per 1,000 population in certain countries and states ... 17
excess of over deaths by months, 1887-92 ... 20
explanation of table 10 ... 21
color, race, sex and nativity of parents of, 1892 ... 22
number of, 1892 by counties ... 23
per 1,000 estimated population ... 23
natural increase over deaths ... 23
comparison of, by counties, 1891-2 ... 26
rate of, effect upon, of number of dwellings and families ... 29
manner of computing ... 29
comparison of among native and foreign born inhabitants ... 29
in Australia, 1882-91 ... 34
number of, 1892 ... 36
shows decrease from 1887-91, owing to fraudulent returns ... 36
estimated correction of ... 36
summary of, 1892 ... 36
rate of, comparing 1892 with previous years ... 37
by counties ... 37
counties showing highest and lowest ... 37
effect of immigration upon ... 38
growth of population to be considered ... 38
in counties containing large cities ... 38
by counties comparing 1892 with 1891 ... 38
cause of decrease of ... 38
in Wayne county ... 38

BIRTHS—*Continued:*
rate of increase in, outside of Wayne county 38
counties showing change in, over 1891 38
highest and lowest 38
relative number by sex 38
number of, in 1892, comparing nativity of parents 39
among foreign and native-born parents nearly equal 39
probable decrease of, for 1893 and following years 39
rate per 1,000 population from United States census 40
diminishing in the states and territories 40
explanation of, in the United States 40
comparison of, in the different states 40
in European countries 41
number of, in 1892, showing proportion to foreign and native-born parents 39
proportion of males to females born to foreign and native-born parents 40
number of, by quarters, 1889-92, still-births included, and average rate, 1882-91 43
by months, 1890-92, and average for 10 years 44
males to 100 females, 1892, by counties and months 45
color of, 1892 53
number of, and nativity of parents, 1892, by sex 54
in 1892, by counties, sex, nativity of parents 57
still-births in 1892, by counties 66
illegitimates 66
proportion of still-births to, 1889-92, and ten-year average, 1882-91 68
illegitimates 68
number of twin and illegitimate children still-born in 1892 69
parent nativity of plural births, 1883-92 71
proportion of, males to females, twins and illegitimates, still-born and born alive, 1891-92, and average for 1882-91 71
number of illegitimate, 1883-92, showing nativity of mothers 72
rate per 1,000 births 72
number of mothers of still-births by nativity and color, 1890-92, and average for 1882-91 72
proportion to total number of mothers 72
number of mothers of illegitimate, by nativity and color, 1890-92 74
average for, 1882-91 74
proportion to total number of mothers 74
list of townships reporting no births, 1892 74
population of 74
list of townships making no returns of births, 1892 75
population of 75
number of still-births, 1892 105
excluded from table showing average age at death by nativity, 1892 143
relation of still-births to all deaths, 1890-92, and average 1882-91 144
corrected by birth returns 144
month and year of, given in table showing deaths, 1892, under one year, by sex, months and age in months, still-births included 144
percentage of still-births to total deaths 144
should be deducted when comparing certain states 144
percentage of deficiency of still-births 144
number deaths of, under 1 year, 1891-2, by sex and months of birth, giving percentage, still-births included 147
months of birth and death of births in 1891, dying within one year, giving percentage, still-births included 148
relation by months and sex of deaths under one month to births in 1892, still-births included 149
death-rates of still-births in Michigan and Massachusetts, by 5-year periods, 1871-90 211
number and rates of deaths of still-births, 1892, compared with 1891 and average for 5-year periods, 1871-90 233
number of deaths from premature birth, by sex, age and months, 1892, and by sex, 1887-92 237
still-births 261
local registration of, letter on, from Dr. W. A. Wilson 322
laws relating to the registration of 331
circular of instruction relating to the collection of, by supervisors and assessors 336
return of, by county clerks 339
registration of, in cities. See *Cities.*

BLADDER—
diseases of, number of deaths from, by months, age and sex, 1892 164
by counties 168
by years 176
number of deaths from, in 1892, and discussion of 199
number of deaths from, by sex, age and months, 1892, and by sex, 1887-92 238
by months, 1890-92, in Detroit 316
in Grand Rapids 318
See *Calculus.*

BLOOD VESSEL—
rupture of, number deaths from, 1892 205
by sex, age and months, 1892, and by sex, 1887-92 238

BLOOD POISONING. See *Septicæmia.*

BOARD OF HEALTH, STATE. See *State Board of Health.*

BOWELS—
consumption of, number and rates of death from, 1892 compared with 1891 and average for 5-year periods, 1871-90 231
number of deaths from, by sex, age and months, 1892, and by sex, 1887-92 239
meaning of expression 193

BOWELS—*Continued:*
diseases of, number and rate of deaths from, 1892 ... 161
number of deaths from, by months, age and sex, 1892 ... 164
by counties, 1892 ... 168
by years, 1869-92 ... 176
number of deaths from, 1892, and discussion of ... 199
number and rate of deaths from, 1892 compared with 1891 and average for 5-year periods, 1871-90 ... 233
by sex, age and months, 1892, and by sex, 1887-92 ... 239
table showing deaths from, by months 1890-2, in Detroit ... 316
in Grand Rapids ... 318
table showing deaths from, per 100,000 population, 1890-2, compared with other diseases ... 320
inflammation of, number of deaths from, by months, age and sex, 1892 ... 164
by counties ... 168
by years ... 176
deaths from, 1892 and discussion of ... 199
by sex, age and months, 1892, and by sex, 1887-92 ... 239
table showing deaths from, by months, 1890-2, in Detroit ... 316
in Grand Rapids ... 318
obstruction of, number and rates of deaths from, 1892 compared with 1891 and average for 5-year periods, 1871-90 ... 232
number of deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 239

BRAIN—
abscess of, number of deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 240
congestion of, number of deaths from, by months, age and sex, 1892 ... 166
by counties ... 170
congestion of, number of deaths from, by years, 1869-92 ... 178
number of deaths from, 1892, and discussion of ... 200
by sex, age and month, 1892, and by sex, 1887-92 ... 240
disease of, number and proportion of deaths from, 1892 ... 161
number of deaths from, by months, age and sex, 1892 ... 166
by counties, 1892 ... 170
by years, 1869-92 ... 178
number of deaths from, 1892, and discussion of ... 200
number and rates of deaths from, 1892, compared with 1891, and average for 5-year periods, 1871-90 ... 231
number of deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 240
table showing deaths from, by months for years, 1890-92, in Detroit ... 316
in Grand Rapids ... 318
table showing death-rate from, per 100,000 population, 1890-92 ... 320
compared with other diseases ... 320
dropsy of, number and rates of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 231
number of deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 245
embolus of, number of deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 240
inflammation of, number of deaths from, by months, age and sex, 1892 ... 166
number deaths from, by counties, 1892 ... 170
by years, 1869-92 ... 178
number of deaths from, 1892, and discussion of ... 200
by sex, age and months, 1892, and by sex, 1887-92 ... 240

BRIDES—
number and percentage of, by nativity, 1892 ... 88
married during 1892 by age-periods ... 98

BRIDEGROOMS—
number and percentage of, by nativity, 1892 ... 88
married during 1892, by age-periods ... 98

BRIGHT'S DISEASE OF THE KIDNEYS. See *Kidneys.*

BRONCHITIS—
number of deaths from, by months, age and sex, 1892 ... 166
by counties, 1892 ... 170
by years, 1869-92 ... 178
number of deaths from, 1892, and discussion of ... 204
number and rate of deaths from, 1892, compared with 1891, and average for 5-year periods, 1871-90 ... 232

BRYCE, M. D., PETER H.—
comments of, on effect of divorces on marriage rates ... 101

BURNING—
number of deaths from, by counties, 1892 ... 215
by sex, 1892, and description of ... 217
imperfect enumeration of ... 217
by sex, age and months, 1892, and by sex, 1887-92 ... 236

BURNS AND SCALDS—
number and rate of deaths from, 1892, compared with 1891, and average for 5-year periods, 1871-90 ... 234

BURIAL PERMITS—
should be required in every instance ... 160
use of, in making death returns more accurate ... 162
cities requiring ... 292
forms of, used in certain cities ... 314

CALCULUS—
number of deaths from, by months, age and sex, 1892 ... 164
by counties, 1892 ... 168
by years, 1869-92 ... 176
in 1892 and discussion of ... 199
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 223
by sex, age and months, 1892, and by sex, 1887-92 ... 238
CANCER—
number and proportion of deaths, 1892 ... 161
number deaths by months, age and sex, 1892 ... 166
by counties, 1892 ... 170
by years, 1869-92 ... 178
in 1892 and discussion of ... 200
deaths from frequently reported as tumors ... 200
number deaths from, 1892, by sex ... 200
death-rates from, 1869-92 ... 200
number deaths from, 1892 and 1872-91, by sex and parts of body ... 201
death-rate from, by 5-year periods, 1871-90, compared with Massachusetts and England ... 210
number and rate of deaths from, 1892, compared with 1891 and averages for 5-year periods 1871-90 ... 231
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 241
number deaths from, by months, 1890-2, in Detroit ... 316
in Grand Rapids ... 318
number deaths from, per 100,000 population, 1890-92, compared with other diseases ... 320
CANKER—
number deaths from, 1892 ... 205
by sex, age and months, 1892, and by sex, 1887-92 ... 241
CARBUNCLE—
number deaths from, 1892 ... 205
number and rate of deaths from, 1892, compared with 1891, and average for 5-year periods, 1871-90 ... 230
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 241
CASUALTIES—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 234
CATARRH—
number deaths from, 1892 ... 205
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 232
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 241
CATARRHAL FEVER—
number deaths from, 1892 ... 202
by sex, age and months, 1892, and by sex, 1887-92 ... 247
CEMETERIES—
control of by special charter provisions ... 297
CENSUS—
of 1870, '74, '80, '84 and '90, showing population at different periods of age, and per cent of whole ... 114
showing per cent of increase of population at certain ages over preceding census ... 114
of 1894, preliminary statements of population by ... 281
death-rates by counties, 1892, based upon ... 180
population of cities by ... 282
CEPHALITIS—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 231
CEREBRAL MENINGITIS. See *Meningitis.*
CEREBRO-SPINAL MENINGITIS. See *Meningitis.*
CERTIFICATES—
of death, certain cities requiring ... 292
forms of, in use in certain cities in Michigan ... 310
CHICKEN-POX—
number deaths by months, age and sex, 1892 ... 164
by counties, 1892 ... 168
by years, 1869-92 ... 176
in 1892, and discussion of ... 196
number and rate of deaths from, 1892, compared with 1891, and average for 5-year periods, 1871-90 ... 230
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 241
by months, 1890-2, in Detroit ... 316
in Grand Rapids ... 318
CHILDBIRTH—
number deaths from, by age and months, 1892 ... 166
by counties, 1892 ... 170
by years, 1869-92 ... 178
in 1892, and discussion of ... 202
death-rates diminishing ... 202
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 234
number deaths from, by age and months, 1892, and by years, 1887-92 ... 243
by months, 1890-2, in Detroit ... 316
in Grand Rapids ... 318
deaths from, per 100,000 population, 1890-2, compared with other diseases ... 320

CHILDREN—
vitality among, as related to age of parents, comments on 101
summary of registration of deaths, 1892 105
number and rate of deaths of, from developmental diseases, 1892, compared with 1891 and average for 5-year periods, 1871-90 ..... 229, 234
See *Infants*.

CHILLS—
number deaths from, 1892, and discussion of 202
congestive, number deaths from, by sex, age and months, 1892, and by sex, 1887-92 242

"CHOLERA"—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 230
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 242

CHOLERA INFANTUM—
number deaths from, by sex, age and months, 1892 164
by counties, 1892 168
by years, 1889-92 176
in 1892 and discussion of 199
death-rate from, in Michigan compared with Massachusetts and England 210
number and rate of deaths from, 1892, compared with 1891, and average for 5-year periods, 1871-90 230
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 242
number deaths from, by months, 1890-92, in Detroit 316
in Grand Rapids 317

CHOLERA MORBUS—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 230
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 242

CHOREA—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 231
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 243

CIRCULATORY DISEASES—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ..... 229, 232

CITIES—
registration of vital statistics in, 1892, Part V 280
discussion of 280
heretofore omitted in registration reports 280
local municipal registration an aid to state registration 280
registration, 1892, compared with previous years 280
synopsis of tables relating to registration in 281
population of, in 1884, 1890 and 1894 282
percentage of city to state population, 1864-94 283
increase of city population 283
births and deaths in, 1890-92, exclusive of Detroit 283
Detroit omitted owing to fraudulent returns 283
comparison of city with country rates 284
local municipal registration of births and deaths 284
births and deaths, 1890-92, with rates per 1,000 population 285
charter provisions of, in regard to deaths and discussion of 287
Table 106, giving reference to charters and ordinances of cities 288
cities requiring burial permits 292
certificates of death 292
provisions of general incorporating law as to registration of births and deaths 292
of special incorporating laws 293
cities having special charter provisions as to burials under powers of council 293
under control of cemeteries 297
ordinances of certain, relating to registration of vital statistics 298
form of certificate of death in use in certain 310
forms of burial permits in use in certain 314
annual death-rate in certain, 1890-92 315

CIVIL CONDITION—
of suicides, 1874-92, by months and years 234

CLARK, JOHN T.—
authority for information as to registration of deaths and burial permits in Big Rapids 288

CLASSIFICATION OF CAUSES OF DEATH. See *Nomenclature and Classification*.

CLIMATIC CONDITIONS—
effect of, upon causes of death, 1892, compared with previous years 266
temperature, average and range of 266
humidity, absolute and relative 268
cloudiness, absolute and relative 268
rain and melted snow, and ozone 269
wind, velocity of 270
atmospheric pressure and range of 270

CLOSE, H. A.—
authority for information as to registration of death and burial permits in Coldwater 288

CLOUDINESS—
average per cent of, by years and months, 1892, compared with 1890, 1891 and 1877-90 268
See *Climatic Conditions*.

COLIC—
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 243
bilious, number deaths from, by sex, age and months, 1892, and by sex, 1887-92 243

COLOR—
table showing race, nativity and sex of marriages, births and deaths, 1892, with population 22
of children born in 1892 37
of persons married, 1892 81
of decedents, 1892 105
by sex, for state and counties 150
comparison of death-rates of different colors not advisable 152
failure to specify, is fault of enumerators 152
population by color and race for state given by United States census 152
question not so important as nativity of decedents 156

COLOR AND NATIVITY—
of mothers of still-born children, 1890-92 72
average, 1882-91 72
proportion to total number of mothers 72
of mothers of twins, 1890-92 73
average, 1882-91 73
proportion to total number of mothers 73
of mothers of illegitimate births, 1890-92 74
average, 1882-91 74
proportion to total number of mothers 74

COMMISSIONER OF RAILROADS—
report of, as to railroad accidents more accurate than registration returns 220

CONGESTION—
number deaths from, 1892 205
by sex, age and months, 1892, and by sex, 1887-92 243
of various organs. See *Bowels*, *Brain*, *Liver*, *Lungs*, *Spine*, *Stomach*, in Table 90.

CONGESTIVE CHILLS—
number deaths from, 1892 and discussion of 202

CONNECTICUT—
births registered per 1,000 living population 17
deaths 18
English registrar-general's arrangement of causes of death, adopted in 184
death-rates in, 1880-92, compared with other states, United States and foreign countries 207
death-rates from consumption in, 1880-92, compared with Michigan, certain states, United States and England 211
diphtheria and croup 212
typhoid fever 212
scarlet fever 213

CONSTITUTIONAL DISEASES—
number deaths from, by months, 1892 227
number and rate of deaths from, 1890-2, and average, 1882-91 227
by geographical divisions, showing population 228
1892, compared with 1891, and average for 5-year periods, 1871-90 ..... 229, 231

CONSUMPTION—
number and proportion of deaths, 1892 161
included in deaths by lung diseases 161
number deaths by age, sex and months, 1892 164
by counties 168
by years, 1869-92 176
number and percentage of deaths from, 1892, by geographical divisions 183
importance of, as cause of death in January, 1892 189
formerly classed as a developmental disease 190
should be classed among infectious diseases, and reason 190
included by state board of health in list of communicable diseases dangerous to public health 190
heads list of dangerous communicable diseases 191
number and rate of death from, by counties, 1892 191
death-rates from, 1869-92 192
nearly same for 24 years 192
deaths from, in certain states, show increase during prevalence of influenza 193
death-rates from, higher in eastern than western states 193
decreasing in eastern states 193
remains constant in western states 193
in Michigan, by 5-year periods, 1871-90, compared with Massachusetts and England 209
1880-92, compared with other states, United States and England 211
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 231
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 243
by months, 1890-92, in Detroit 316
in Grand Rapids 318
other tubercular diseases in Detroit 316
in Grand Rapids 318
per 100,000 population, 1890-92, as enumerated for the State and registered for Detroit and Grand Rapids 320

CONVULSIONS—
number deaths from, by age, sex and months, 1892 166
by counties, 1892 170
by years, 1869-92 178
number deaths in 1892 and discussion of 202
death rate from, in Michigan compared with Massachusetts and England 210
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 231

CONVULSIONS—*Continued:*
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 243
by months, 1890-92, in Detroit 316
in Grand Rapids 318
per 100,000 population as compared with other diseases 320

COUGH—
number deaths from, 1892 205
by sex, age and months, 1892, and by sex, 1887-92 243

COUNTIES—
number marriages registered for 1892 by 23
births and deaths 23
excess of births over deaths in 1892 23
rates per 1,000 estimated population of marriages, births and deaths, 1892 23
natural increase of births over deaths, 1892 23
comparison of marriages, births and deaths by, 1891-92 26
increase or decrease for 1892 over 1891 26
still-births included in births and deaths 26
increase of population by, 1880-90 30
number males and females by, 1890 30
native and foreign born by, 1890 30
total dwellings by, 1890 30
total families by, 1890 30
number persons to each dwelling, 1890 30
chief products and industries 30
births in, 1892, compared with previous years 37
showing lowest and highest birth-rate 37
containing large cities, birth-rate in 38
number births by sex and months, 1892 45
showing preponderance of native and foreign born parents 56
comparison of 56
number pairs twins by, 1892 66
townships of, reporting no births, 1892 74
population of such townships 74
number marriages in, by months, 1892 85
by nativity, sex and age in periods of years 90
color of decedents in, by sex, 1892, still-births included 150
number, sex and nativity of decedents by, 1892, still-births included 154
containing cities more accurate in enumerating deaths and reasons 162
diseases causes of death by 168
death rates by, 1892, showing geographical divisions 180
counties in each division 181
rates of births, marriages and deaths may be changed in certain 182
population, 1892, estimated from census, 1890 and 1894 182
number and rate of deaths from consumption by 191
comparison of deaths from diphtheria by 195
number deaths from violence specifying causes by 215

COUNTY CLERKS—
circular of instruction as to return of births, marriages and deaths by 339

CROUP—
number deaths by age, sex and months, 1892 164
by counties, 1892 168
by years, 1869-92 176
number and percentage of deaths from, 1892, by geographical divisions 183
classed among miasmatic diseases of zymotic class in old form of nomenclature 185
among local diseases by English registrar-general 185
with diphtheria in present Michigan classification 185
death-rates from, by 5-year periods, 1871-90, compared with Massachusetts and England 209
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 230
number deaths from by sex, age and months, 1892, and by sex, 1887-92 244
number deaths from, by months, 1890-92, in Detroit 316
in Grand Rapids 318
number deaths from, per 100,000 population, 1890-92 in Michigan, Detroit and Grand Rapids 320
membranous, deaths from, by age, sex and months, 1892 164
by counties, 1892 168
by years, 1869-92 176
by sex, age and months, 1892, and by sex, 1887-92 244
See *Diphtheria and Croup.*

CUTLER, FRED, JR.—
authority for information as to registration of deaths and burial permits in Ionia 289

CYANOSIS—
number deaths from, 1892 205
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 234
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 244

CYSTITIS—
number deaths by age, sex and months, 1892 164
by counties, 1892 168
by years, 1869-92 176
in 1892 and discussion of 199
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods 1871-90 233

DANGEROUS COMMUNICABLE DISEASES—
importance of study 161
number and per cent of total diseases, 1892 161
number by sex, months of death and periods of age, 1892 164
by counties, 1892 168
by years, 1869-92 176
discussion 189
classification and total deaths from each, by months, 1890-92, in Detroit 316
in Grand Rapids 318

DEATHS—
defects in law requiring registration of 1
consequences of 1
number of, not returned 1, 3
value of registration returns 1
importance of various diseases as causes of 2
total number of, reported in 1892 2
allowance for delinquent returns 3
reasons why reported number of, are inaccurate 3
immediate registration of, recommended by national census 3
report of United States census, 1890, concerning 3
comparison of results between states using different methods 3
estimate of death-rates in Michigan 3
actual registration in cities 4
larger than reported number 4
registration in cities a fair indication for state 4
rate of, in Kalamazoo, Grand Rapids, Detroit, Niles, Lansing, Manistee and Muskegon, in 1890 4
number of, in 1892 6
average number per quarter, month, week and day, in 1892 6
excess of births over, in 1892 6
number of, 1867-92 7
excess of births over 7
per cent of, to births 7
in 1892 larger than previous years, except 1891 8
in Wayne county and Detroit, 1880-92 8
rate per 1,000 population 8
comparison of, with total population 9
table showing registration of, in Michigan, from 1867-92 13
rate of, per 1,000 population 13
fraudulent returns from Wayne county 14
in Michigan, from census returns, 1870-90 14
rates per 1,000 population 14
registration per 1,000 population, in certain states and countries, 1880-92 18
excess of births over, by months, 1887-92 20
number of, by color, race, sex and nativity, for 1892 22
registered in 1892, by counties 23
rate per 1,000 estimated population 23
table of comparison of, in 1891 and 1892 26
ratio of, higher among males than females 29
in Australia, 1882-91 34
in Michigan, during 1892, introduction to tables 102
summary of registration of, for 1892 105
by months, number in Michigan for 1890-92 107
as compared with average, 1882-91 107
by quarter years, number of, in Michigan, for 1890-92 107
as compared with average, 1882-91 107
by months and quarter years, table of, explained 108
by sex, explanation of, table showing 108
rate of, for years 1880-92, table showing 109
per 1,000 population of same sex 109
ratio of males to females 109
by sex and age, table of proportion, 1892 110
and death-rate by ages, value of statistics of 111
by ages, total number of, by years, 1870-92 112
rates per 1,000 population 112
under one year, rate per 1,000 births 112
for 1892, arranged according to month of death and periods of age of decedent 116
relation of, at different periods of age to deaths at all ages 116
by counties, sex, age and months in which deaths occurred for 1892 118
number, by periods of age, sex and months for 1892 120
age, sex and months for 1892 122
average age at, of decedents for 1892, compared with 1890-91 142
by nativity 142
relation of still-births to all deaths, 1890-92 144
average relation for 10 years, 1882-91 144
of infants under one year, number of 143
distribution of, by months, and proportion to births 143
percentage of still-births to total 144
by sex, months and age in months, and month of birth 144
greater than for any other period 146
in 1891-92 of births of 1891, by sex, months of birth, and percentage to total births 147, 148
under one month compared by month and sex with births, 1892 149
number of, by color and sex, for state and by counties, 1892, still-births included 150
number of, by nativity of decedents, for 1890-92 153
average for 10 years, 1882-91 153
nativity of, by numbers and by sex, for state and counties, explanation of table 153
rate of, by nativity and age 156
comparison of, 1892, with estimated population, by nativity and age, showing rates per 1,000, still-births excluded 157

DEATHS—*Continued:*
number of, by age-periods ... 157
foreign-born and native-born ... 157
reported as not occurring in certain townships ... 157
supervisors neglected to enumerate in certain townships ... 157
list of townships making no return of, 1892 ... 159
causes of, in, 1892, remarks on ... 160
reported from specified causes, report deficient ... 160
causes of, share in deficiency of enumeration ... 160
report of each should be increased 60 per cent ... 160
statements of, not based on death certificates ... 160
important causes of ... 161
summary of registration of causes of, 1892 ... 161
preliminary remarks on tables of causes of ... 162
as to relative number of, by sex, age and month of occurrence ... 162
total number from all causes too low in tables ... 162
from each specified cause ... 162
diseases causing, by sex, months and age, 1892 ... 164
total by months, sex, ages and diseases, 1892 ... 164
disease causing, by counties, 1892 ... 168
total by diseases and counties, 1892 ... 168
diseases causing, by years, 1869-92 ... 176
rates of, by counties, 1892 ... 180
rates shown by geographical divisions ... 180
counties in each division ... 181
number and percentage of, from old age and under 5 years, by geographical divisions ... 182
number and percentage of, 1892, from consumption, pneumonia, influenza, diphtheria, croup, scarlet fever, typhoid fever, diarrheal diseases, by geographical divisions ... 183
discussion of tables relating to causes of death, 1892 ... 184
Dr. Farr's system of nomenclature and classification unsatisfactory ... 184
proposed classification of diseases returned as causes of death ... 186
nomenclature and classification of causes of death employed in this report ... 187
important diseases returned as causes of death ... 188
total from all causes, 1892 ... 188
from each cause specified ... 188
rate of, for 1892, lowest since 1886 ... 188
returns of, in state, deficient ... 188
cannot be directly compared with other states ... 188
returns of, by years, in state, may be compared by diseases ... 189
number of, in January, 1892, exceeded any other month ... 189
diseases causing ... 189
total from specified diseases, 1892 ... 189
from dangerous communicable diseases ... 189
from consumption, number and rates of, by counties, 5-year period, 1888-92 ... 191
by years, 1869-92 ... 192
in certain states, show increase during prevalence of influenza ... 193
rates higher in eastern than western states ... 193
decreasing in eastern states ... 193
remaining constant in western states ... 193
from tubercular diseases, 1892 ... 193
from diphtheria and croup, comparison and discussion ... 193
number and rates of, by counties, 5-year period, 1888-92 ... 195
from erysipelas and discussion of ... 196
from puerperal fever and discussion of ... 196
from scarlet fever and discussion of ... 196
rates of, from, 1869-92 ... 196
from typhoid, typho-malarial and typhus fever, discussion of ... 196
rates of, from typhoid fever, 1869-92 ... 197
in England rate decreasing ... 197
from glanders, number of ... 197
from measles, 1892, number and discussion of ... 197
rates of, 1869-92 ... 197
from German measles, discussion of ... 198
from small-pox, discussion of ... 198
rates of, from 1869-92 ... 198
from chicken-pox, discussion of ... 198
from whooping-cough, discussion of ... 198
rates of, from 1869-92 ... 199
from bladder diseases, calculus and cystitis, discussion of ... 199
from bowel diseases, discussion of ... 199
from brain diseases, discussion of ... 200
from cancer and tumor, discussion of ... 200
rates of, 1869-92 ... 200
by sex, and parts of body, 1872-91 ... 201
from childbirth, specified causes ... 202
rates diminishing ... 202
from convulsions, and discussion of ... 202
from diabetes, and discussion of, 1892 ... 202
from dropsy, and discussion of, 1892 ... 202
from fever, bilious fever, catarrhal fever, gastric fever, nervous fever, discussion of ... 202
from malarial fevers, number and discussion of ... 202
from heart diseases, forms of, number and discussion of ... 203
from influenza, number and discussion of ... 203
number of, by months, 1889-92 ... 203
from kidney diseases, number and discussion of ... 203
from liver diseases, number and discussion of ... 203
from lung diseases, number and discussion of ... 204

DEATHS—*Continued:*
from pneumonia, 1883-92, by months, with average for 10-year period 204
from 1869-92, rate of, per 100,000 population 205
from rheumatism, number and discussion of, 1892 205
from septicæmia, number and discussion of, 1892 205
from spine disease, term indefinite, 1892 205
from stomach diseases, number and discussion of, 1892 205
from syphilis, number, discussion and report of, 1892 205
from certain specified but unclassified diseases, number and discussion of 205
rates in Michigan, 1880-92, compared with other states, United States and foreign countries 207
authorities for rates of 208
Michigan rates should be increased at least 60 per cent 208
rates in Michigan, from certain specified causes, by 5-year periods, 1871-90, compared with Massachusetts and England 209
rates of, from consumption, 1880-92, in Michigan, compared with certain other states, the United States and England 211
diphtheria and croup 212
typhoid fever 212
scarlet fever 213
from violence, classification of 213
discussion of, and tables showing number under each class 213
by counties, specifying causes 215
accidental, number of, by sex, 1892 217
from drowning, 1885-93, on great lakes 218
description of important disasters 218
from mining accidents, showing counties and occupations of decedents 218
description of important disasters 219
from poison, number of adults and infants, and drug taken 219
from railroads, classified as to manner of accident and persons killed 220
rates of, decreasing 220
from 1883-93, showing passengers carried, passengers, employés and others killed and injured 221
employés on railroads, classes of, and death-rates, 1892 221
comparison of rates of, by classes of employés 222
caused by horses and vehicles 222
miscellaneous 222
suicide, number of and discussion, 1892 223
by months, years, sex and civil condition, 1874-92 224
by occupation of decedents 225
by nativity 226
means employed, 1892, 1874-92 226
homicide, increasing 228
old classified and alphabetical tables of causes of 227
by months and classes of causes, 1892 227
number and rates of, 1890-2, from all causes 227
from each class of causes 227
average for 10 years, 1882-91 227
number and rate of, 1892, and classes of causes of death, by geographical divisions 228
compared with 1891 and average for 5-year periods, 1871-90 230
by age, sex, causes and months, 1892, and by sex and causes, 1887-92 235
climatic conditions affecting causes of, discussion of 266
See *Climatic Conditions.*
forms of certificates of, used in certain cities of Michigan 310
from important diseases, remarks on rates of 315
rates in certain cities for 1890-92 315
from specified diseases by months for 1890-92, totals in Detroit 316
in Grand Rapids 318
comparison of rates of, from certain important diseases for 1890-92 320
by months, in Wayne and Kent counties, Detroit and Grand Rapids, compared with state 321
from consumption in Detroit and Grand Rapids, compared with state 322
comparison of, in United States, cities for 1892 323
laws relating to registration of 331
circular of instruction relating to collection of statistics by supervisors and assessors 336
relating to the return of by county clerk 339
registration of, in cities. See *Cities.*

DEBILITY—
indefinite form of return 160
number deaths from, 1892 205
by sex, age and months, 1892, and by sex, 1887-92 244

DECEDENTS—
average age of, by occupation, 1892, compared with previous years 270
discussion of, and classification of, by occupations 270
ages of, by classified occupations 272
See *Deaths.*

DENMARK—
marriages per 1,000 population 16
births registered per 1,000 population 17
deaths registered per 1,000 population 18

DETROIT—
population and death-rate of, in 1890 4
fraudulent return of births in 5
See also *Cities* and *Wayne County.*

DEVELOPMENTAL DISEASES—
number of deaths by months from, in 1892 227
number and rate of deaths from, 1890-2, and average, 1882-91 227
in 1892, by geographical divisions, showing population 228
compared with 1891, and 5-year period, 1871-90 ..... 229, 233

DWELLINGS—
number of, by counties, and number persons to each, 1890 ... 30

DIABETES—
deaths from, by months, age and sex, 1892 ... 166, 244
by counties, 1892 ... 170
by years, 1869-92 ... 178
total deaths from, in state, 1892, and discussion of ... 202
death-rate in Michigan, by 5-year periods, 1871-90, compared with Massachusetts and England ... 210
number and rates of death from, in 1892, as compared with 1891 and average for 5-year period, 1871-90 ... 232
number deaths from, by sex, 1887-92 ... 244
by months, 1890-2, in Detroit ... 316
in Grand Rapids ... 318

DIAGRAMS—
list of ... xxi
acknowledgment to state board of health for certain ... 189

DIARRHEA—
number deaths by months, age, sex, 1892 ... 164
by counties, 1892 ... 168
by years, 1869-92 ... 176
from, and discussion of ... 199
number and rates of death from, 1892, compared with 1891 and average for 5-year period, 1871-90 ... 230
deaths from, by sex, age, months, 1892, and by sex, 1887-92 ... 244
table showing deaths from, by months, for years, 1890, '91, '92, in Detroit ... 316
in Grand Rapids ... 317

DIARRHEAL DISEASES—
number and percentage of deaths from, 1892, by geographical divisions ... 188

DIARRHEA AND DYSENTERY—
death-rate from, in Michigan, by 5-year periods, 1871-90, compared with Massachusetts and England ... 210

DIATHETIC DISEASES—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 229

DIETIC DISEASES—
number and rate of deaths from, 1892 compared with 1891 and average for 5-year periods, 1871-90 ... 229

DIGESTIVE DISEASES—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 229

DIPHTHERIA—
deaths by months, age, sex, 1892 ... 164
by counties, 1892 ... 168
by years, 1869-92 ... 176
number and percentage of deaths from, 1892, by geographical divisions ... 188
most formidable specific infectious disease in state next to tuberculosis ... 194
comparison of deaths from, by counties ... 195
death rates from, in Michigan by 5-year periods, 1871-90, compared with Massachusetts and England ... 209
number and rate of deaths from, 1892, compared with 1891, and average for 5-year periods, 1871-90 ... 230

DIPHTHERIA AND CROUP—
number and proportion of deaths, 1892 ... 161
number deaths from, 1892 ... 193
comparison and discussion of ... 193
classified together by state board of health ... 193
death-rates, 1869-92 ... 194
in Michigan, 1880-92, compared with certain states, United States and England ... 212
deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 245
deaths from, by months, 1890-92, in Detroit ... 316
in Grand Rapids ... 318

DISEASES—
certain, more fully reported than others ... 160
dangerous communicable, given prominence in tables ... 161
impracticable to show meteorological effects on ... 162
causing death, by sex, months and age, 1892 ... 164
by counties, 1892 ... 168
by years, 1869-92 ... 176
discussion of tables relating to causes of death, 1892 ... 184
Dr. Farr's system of nomenclature and classification unsatisfactory ... 184
proposed classification of causes of death ... 186
nomenclature and classification of causes of death, principles to be observed ... 187
total deaths from, 1892 ... 188
causing death in January, 1892 ... 189
total deaths from, specified, 1892 ... 189
total deaths from dangerous communicable, 1892 ... 189
number of deaths from important, by months, for the years 1890-92, in Detroit ... 316
in Grand Rapids ... 318
unclassified, table showing deaths from, by months, for years 1890-92, in Detroit ... 316
in Grand Kapids ... 318
certain important, comparison of death-rates from, in Michigan, Detroit and Grand Rapids, 1890-92 ... 320

DIVORCES—
number of, 1867-96 ... 7
taken from report of United States Labor Commissioner ... 7
excess of marriages over ... 7
per cent of marriages to ... 7
average of, by 5-year periods ... 7
ratio of, to marriages increasing ... 8
difference between, and marriages ... 8
effect of, on relations between marriage and birth-rates ... 8
need of registration of ... 101

DR. FARR—
nomenclature and classification of causes of death by. See *Nomenclature and Classification of Causes of Death.*

DROPSY—
deaths from, by months, age and sex, 1892 ... 166
by counties, 1892 ... 170
by years, 1869-92 ... 178
discussion of term indefinite, reason why ... 202
number and rates of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 231
deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 245
by months for years 1890-92, in Detroit ... 316
in Grand Rapids ... 318
of various organs. See *Brain, Bowels, Chest, Heart, Kidneys, Liver, Scrotum, Stomach,* in Table 90.

DROWNING—
deaths from, by counties, 1892 ... 215
in 1892, description of, does not include disasters on great lakes ... 217
in 1885-93, on great lakes, showing lakes, lives lost, vessels and values ... 218
description of important disasters on great lakes ... 218
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 234
deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 296

DYSENTERY—
number deaths by months, age and sex, 1892 ... 164
by counties, 1892 ... 168
by years, 1869-92 ... 176
from, 1892, and discussion of ... 199
number and rate of deaths from, 1892, compared with 1891, and average for 5-year periods, 1871-90 ... 230
deaths from, by sex, age, months, 1892, and by sex, 1887-92 ... 246
chronic, number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 246
deaths from, by months, 1890-92, in Detroit ... 316
in Grand Rapids ... 318

EASTERN STATES—
death rate from consumption in, higher than western ... 192
show diminution in death-rates from consumption ... 193

ECLAMPSIA—
number deaths from, by age and months, 1892, and each year, 1887-92 ... 242

ECTOPIC GESTATION—
number deaths from, 1892 ... 202
by age and months, 1892, and each year, 1887-92 ... 242

ECZEMA—
number deaths from, 1892 ... 205
by sex and months, 1892, and by sex, 1887-92 ... 246

EDSON, M. D., CYRUS—
comments of, on increase of age of females at marriage ... 101

ENDOCARDITIS. See *Heart.*

ENGLAND—
death-rates from consumption in, 1880-92, compared with certain states and United States ... 211
diphtheria and croup ... 212
typhoid fever ... 212
scarlet fever ... 213

ENGLAND AND WALES—
number of persons married per 1,000 living population ... 16
births per 1,000 living population ... 17
deaths per 1,000 living population ... 18

ENGLISH REGISTRAR-GENERAL—
arrangement of causes of death by. See *Nomenclature and Classification of Causes of Death.*

ENTERITIS—
number and rate of deaths from, 1892, compared with 1891, and average for 5-year periods, 1871-90 ... 232
See *Bowels, Inflammation of.*

ENTHETIC DISEASES—
number and rate of deaths from, 1892, compared with 1891, and average for 5-year periods, 1871-90 ... 229

ENUMERATION—
deficiency in, of births in certain months ... 146
of deaths, system imperfect, and reason why ... 160
remedy suggested ... 160
deficiency in, must be considered in using Tables 78-81 ... 211

ENUMERATOR—
failure to specify color by, result of carelessness 152
remedy suggested 153
definite statement of, as to cause of death questionable 160
having no medical knowledge are unable to make proper death returns 160
remedy suggested 160

EPILEPSY—
deaths by months, age and sex, 1892 166
by counties, 1892 170
by years, 1869-92 178
from, 1892, and discussion of 200
number and rates of deaths from, 1892, compared with 1891, and average for 5-year periods, 1871-90 231
of deaths from, by sex, age and months, 1892, and by sex, 1887-92 246
See *Brain Diseases.*

ERRATA xxii

ERYSIPELAS—
deaths by months, age and sex, from, 1892 164
by counties, 1892 168
by years, 1869-92 176
deaths from, 1892, and discussion of 196
death-rate from, by 5-year periods, 1871-90, compared with Massachusetts and England 210
number and rates of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 230
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 246
months for years 1890-92, in Detroit 316
in Grand Rapids 318

EVANS, JOHN—
authority for information relating to registration of deaths and burial permits in Ironwood 289

FAMILIES—
number of, by counties, 1890 30
persons to each dwelling 30

FEMALES—
number of native and foreign-born, marriages and deaths 22
predominance of males in population 29
ratio of deaths lower than males 29
census of, by counties, 1890 30
number born in 1892 37
relative to males 38
birth of, in each county, 1892, by months 45
number born in 1892, by nativity of parents 54
by counties and nativity of parents 57
still-born, twin and illegitimate, 1892 69
proportion of, born alive, still-born, twins and illegitimate, 1891-2 71
compared with males, average for 1882-91 71
average ages of, by nativity of persons married, compared with other years 89
married, by nativity, by counties, in period of years 90
number of, at each period of age married in 1892 98
proportion of, to total number 98
married under legal age in 1892, by counties 99
comparison for period of years, 1883-92 99
ratio of ages of, at marriage by periods of years, 1871-90 100
average age of, at death, 1892 105
deaths of, 1880-92, rate per 1,000 females 109
as compared with males 109
by periods of ages in 1892, compared with males 110
age, counties, and months in which deaths occurred for 1892 129
ages of, in periods of years, of number having died, 1892 130
at all ages by months 133
average age of, at death, by nativity of decedents, 1892, compared with 1890-91, still-births included 143
at death by nativity, 1892, still-births excluded 143
deaths of, under one year, 1892, by months, month and year of birth, still-births included 144
1891-92, of births 1891, by months of births, giving percentage of total births, still-births included 147
relation by months of deaths under one month to births, 1892, still-births included 149
deaths by state and counties, 1892, of all colors 150
number deaths of, by nativity, 1892 154
by months, age and disease, 1892 164
from cancer, cancer of breast, stomach and uterus, 1892 200
from cancer, 1892 and 1872-91, by parts of body 201
accidental deaths of, 1892 217
exceeded by males from all causes except burning 217
number deaths from burning 217
imperfectly enumerated 217
of suicides 1874-92, by months, years and civil condition 224
by age, causes, months, 1892, and by causes, 1887-92 235

FERTILITY—
comparison of, among foreign and native born parents 39

FORM—
of application for marriage license 78
of marriage license 79
of record of marriage preserved by county clerk 80
of death certificates used in certain cities 310
of burial permits in use in certain cities 314

FRANCE—
number of persons married per 1,000 living population in ... 16
births per 1,000 living population in ... 17
deaths per 1,000 living population ... 18
death-rates in, 1880-92, compared with other foreign countries, United States and certain states ... 207

GALL-STONE—
number deaths from, 1892 ... 208
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 249

GANGRENE—
number deaths from, 1892 ... 205
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 231
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 249

GASTRITIS—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 232

GASTRIC FEVER—
number deaths from, 1892 ... 202
by sex, age and months, 1892, and by sex, 1887-92 ... 247

GENERATIVE DISEASES—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods 1871-90 ... 229, 232

GENNELL, A. J.—
authority for information as to registration of deaths and burial permits in St. Ignace ... 290

GEOGRAPHICAL DIVISIONS OF STATE—
used in study of causes of death ... 180
number and percentage of deaths from old age and persons over 70 and under 5, by ... 182
number and percentage of deaths 1892 by, from consumption, pneumonia, influenza, croup, scarlet fever, typhoid fever and diarrheal diseases ... 183
number and rate of deaths by, 1892, and classes of causes of death, showing population ... 228

GEOMETRICAL RATIO—
of increase as shown by different decades ... 12

GERMANY—
number persons married per 1,000 living population ... 16
births registered per 1,000 living population ... 17
deaths registered per 1,000 living population ... 18
death-rates in 1880-92 compared with other foreign countries, certain states and United States ... 207

GERMAN MEASLES. See *Measles.*

GLANDERS—
number deaths by age, sex and months, 1892 ... 164, 197
by counties, 1892 ... 168
by years, 1869-92 ... 178
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 230
number and deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 249

GOITRE—
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 249

GOGEBIC COUNTY—
failure to specify color in death returns ... 152
defective returns in other respects ... 153

GOUT—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 231
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 249

GRAND RAPIDS—
population and death-rate of 1890 ... 4

GREAT LAKES—
deaths, 1885-93, from drowning in, showing lakes, lives lost, vessels and value ... 218
description of important disasters ... 218

GREENMAN, JAMES A.—
authority for information as to registration of deaths and burial permits in Charlotte ... 288

GRIP. See *Influenza.*

GUN-SHOT—
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 236
number deaths from, 1892, by counties ... 215

HEALTH, STATE BOARD OF. See *State Board of Health.*

HEART—
diseases, number deaths from, 1892, and discussion of ... 203
number and proportion of deaths from, 1892 ... 161
number deaths from, by age, sex and months, 1892 ... 166
by counties, 1892 ... 170
by years, 1869-92 ... 178
not comparable with previous years and reasons ... 202
death-rates from, in Michigan by 5-year periods, 1871-90, compared with Massachusetts and England ... 209

HEART—*Continued:*
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 232
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 249
number deaths from, by months, 1890-92, in Detroit ... 316
in Grand Rapids ... 318
number deaths from, per 100,000 population, 1890-92, compared with other diseases ... 320
dropsy of, number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 245
endocarditis, number deaths from, 1892, and discussion of ... 203
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 249
failure, not included in number and proportion of deaths by heart disease ... 161
number deaths from, by sex, age and months, 1892 ... 166
by counties, 1892 ... 170
by years, 1891-92 ... 178
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 249
fatty degeneration of, number deaths from, 1892, and discussion of ... 203
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 250
hypertrophy of, number deaths from, 1892, and discussion of ... 203
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 250
neuralgia of, number deaths from, 1892, and discussion of ... 203
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 250
paralysis of, number deaths from, 1892, and discussion of ... 203
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 250
pericarditis, number of deaths from, by months, age and sex, 1892 ... 166
by counties ... 170
by years, 1889-92 ... 178
number deaths from, 1892, and discussion of ... 203
and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 232
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 250
rheumatism of, number deaths from, 1892, and discussion of ... 205
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 250
valvular disease of, number deaths from, 1892, and discussion of ... 203
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 251

HEAT AND SUNSTROKE—
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 236

HEMORRHAGE—
number deaths from, 1892 ... 205
by sex, age and months, 1892, and by sex, 1887-92 ... 251
post-partum, number deaths from, 1892 ... 202
number deaths from, by age and months, 1892, and by years, 1887-92 ... 242
of various organs. See *Bladder, Bowels, Kidneys, Lungs, Navel, Stomach, Uterus.*

HEPATITIS—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 233

HERNIA—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 232
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 251

HINMAN, WM. C.—
authority for information as to registration of deaths and burial permits in Lansing ... 289

HIP—
disease of, number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 251

HODGKIN'S DISEASE—
number deaths from, 1892 ... 205
by sex, age and months, 1892, and by years, 1887-92 ... 251

HOLBROOK, E. G.—
authority for information as to registration of deaths and burial permits in Hastings ... 289

HOLLAND—
number persons married per 1,000 living population ... 16
births registered per 1,000 living population ... 17
deaths registered per 1,000 living population ... 18

HOLLAND, GEO. W.—
authority for information as to registration of deaths and burial permits in Flint ... 289

HOMICIDE—
death-rate from, in Michigan, by 5-year periods, 1871-90, compared with Massachusetts and England ... 211
number deaths from, 1892, specifying causes ... 214
by counties ... 215
increasing ... 223
returns inaccurate ... 223
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 229, 234
number deaths from, by sex, age and months, 1892, and sex, 1887-92 ... 251

HUME, M. B.—
authority for information as to registration of deaths and burial permits in West Bay City ... 291

HUMIDITY—
average absolute and relative, for year and months, 1892, compared with 1890, '91, and 1877-90. See *Climatic Conditions.* ... 268

HUNGARY—
number persons married per 1,000 living population ... 16
births registered per 1,000 living population ... 17
deaths registered per 1,000 living population ... 18

HYDROCEPHALUS—
classed with other tubercular diseases ... 198
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 231
HYDROPHOBIA—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 230
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 251
ILLEGITIMATE BIRTHS. See *Births*.
IMMIGRATION—
effect on birth-rate ... 38
checked in upper peninsula, reasons for ... 180
INANITION—
number deaths from, 1892 ... 205
by sex, age and months, 1892, and by sex, 1887-92 ... 251
INDIANS—
number deaths of, 1892 ... 195
by state and counties for 1892, of all sexes ... 150
number and percentage of deaths, 1892 ... 152
INDIANA—
death-rates in, 1880-92, compared with other states, United States and foreign countries ... 207
death-rates from consumption in, 1880-92, compared with Michigan, other states, United States and England ... 211
diphtheria ... 212
typhoid fever ... 212
scarlet fever ... 213
INDIGESTION—
number deaths from, 1892 ... 205
by sex, age and months, 1892, and by sex, 1887-92 ... 205
INFANTILE DISEASES—
changes in inclusion of term ... 206
number deaths from, 1892 ... 205
by sex, age and months, 1892, and by sex, 1887-92 ... 252
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 232
INFANTS—
deaths of, age under one year ... 143
percentage of ... 144
still-births included ... 144
still-births excluded ... 144
number deaths of, 1892, under one year by sex, months and age in months, giving month and year of birth, still-births included ... 144
deaths of, under one year greater than for any other period ... 146
number deaths of under one year, 1891-92, of births 1891, by sex and months of birth, giving percentage of total births, still-births included ... 147
number and percentage of deaths by geographical divisions ... 182
death-rate, 1892, lowest since 1885 ... 186
INFLAMMATION—
number deaths from, 1892 ... 205
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 252
of various organs. See *Bladder*, *Brain*, *Breast*, *Bowels*, *Heart*, *Kidneys*, *Liver*, *Navel*, *Spine*, *Stomach*, *Throat*, *Uterus*, in Table 90; also *Pneumonia*.
INFLUENZA—
number and proportion of deaths, 1892 ... 161
number deaths by months, age and sex, 1892 ... 166
by counties, 1892 ... 170
by years, 1889-92 ... 178
number and percentage of deaths from, 1892, by geographical divisions ... 183
importance as a cause of death in January, 1892 ... 180
accelerated deaths of consumptives, 1891 and 1892 ... 193
number deaths from, 1892, and discussion of ... 208
by months ... 208
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 230
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 252
by months, 1890-92, in Detroit ... 316
in Grand Rapids ... 318
death-rate from, per 100,000 population, 1890-92, as compared with other diseases ... 320
INSANITY—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 231
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 252
INTEGUMENTARY DISEASES—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 229, 233
INTEMPERANCE—
number deaths from, 1892 ... 205
death-rate from, in Michigan by 5-year periods, 1871-90, compared with Massachusetts and England ... 210
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 231
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 252

INTERMITTENT FEVER—
number deaths from, 1892, and discussion of ... 202
by sex, age and months, 1892, and by sex, 1887-92 ... 247

IRELAND—
number persons married per 1,000 living population ... 16
births registered per 1,000 living population ... 17
deaths registered per 1,000 living population ... 18

ITALY—
number persons married per 1,000 living population ... 16
births registered per 1,000 living population ... 17
deaths registered per 1,000 living population ... 18
death-rates in, 1880-92, compared with other foreign countries, United States and certain states ... 207

JANUARY—
deaths in, 1892, exceeded any other month of the year ... 189

JAPAN—
number of births per 1,000 living population ... 17
deaths per 1,000 living population ... 18

JAUNDICE—
number deaths from 1892 ... 203
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 233
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 253

KALAMAZOO—
population and death-rate of, in 1890 ... 4

KIDNEYS—
Bright's disease of, death-rate from, by 5-year periods compared with Massachusetts and England ... 210
increasing generally ... 208
number of deaths from, 1892, and discussion of ... 203
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 233
number of deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 253
disease of, number of deaths from, by months, age and sex, 1892 ... 166
by counties, 1892 ... 170
by years, 1869-92 ... 178
increasing generally ... 208
number of deaths from, 1892, and discussion of ... 203
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 233
number of deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 253
by months, 1890-92, in Detroit ... 316
in Grand Rapids ... 318
table showing death-rate from, per 100,000 population, 1890-92 ... 320
compared with other diseases ... 321
hemorrhage of, number of deaths from, 1892 ... 203
by sex, age and months, 1892, and by sex, 1887-92 ... 253
inflammation of, number of deaths from, by months, age and sex, 1892 ... 166
by counties, 1892 ... 170
by years, 1869-92 ... 178
increasing generally ... 208
number of deaths from, 1892, and discussion of ... 203
by sex, age and months, 1892, and by sex, 1887-92 ... 253

KÖRÖSI, DR.—
comments of, on increase of age of females at marriage ... 101

LETTER OF TRANSMITTAL—
of secretary of state to governor ... iii

LA GRIPPE. See *Influenza*.

LAKETON—
township of, had 2,204 inhabitants 1890 and reports no deaths 1892 ... 157

LANSING—
population and death-rate of, in 1890 ... 4

LARYNGITIS—
number of deaths from, 1892 ... 205
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 233
number of deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 253
tubercular ... 253

LAWS—
relating to the solemnization and record of marriages ... 327
registration of births and deaths ... 331

LEUCOCYTHÆMIA—
number of deaths from, 1892 ... 205
by sex, age and months, 1892, and by sex, 1887-92 ... 253

LIGHTNING—
number of deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 236

LINDBLOM, FRED—
authority for information relating to registration of deaths and burial permits in Manistee ... 289

DANGEROUS COMMUNICABLE DISEASES—
importance of study 161
number and per cent of total diseases, 1892 161
number by sex, months of death and periods of age, 1892 164
by counties, 1892 168
by years, 1869-92 176
discussion 189
classification and total deaths from each, by months, 1890-92, in Detroit 316
in Grand Rapids 318
DEATHS—
defects in law requiring registration of 1
consequences of 1
number of, not returned 1, 3
value of registration returns 1
importance of various diseases as causes of 2
total number of, reported in 1892 2
allowance for delinquent returns 3
reasons why reported number of, are inaccurate 3
immediate registration of, recommended by national census 3
report of United States census, 1890, concerning 3
comparison of results between states using different methods 3
estimate of death-rates in Michigan 3
actual registration in cities 4
larger than reported number 4
registration in cities a fair indication for state 4
rate of, in Kalamazoo, Grand Rapids, Detroit, Niles, Lansing, Manistee and Muskegon, in 1890 4
number of, in 1892 6
average number per quarter, month, week and day, in 1892 6
excess of births over, in 1892 6
number of, 1867-92 7
excess of births over 7
per cent of, to births 7
in 1892 larger than previous years, except 1891 8
in Wayne county and Detroit, 1880-92 8
rate per 1,000 population 8
comparison of, with total population 9
table showing registration of, in Michigan, from 1867-92 13
rate of, per 1,000 population 13
fraudulent returns from Wayne county 14
in Michigan, from census returns, 1870-90 14
rates per 1,000 population 14
registration per 1,000 population, in certain states and countries, 1880-92 18
excess of births over, by months, 1887-92 20
number of, by color, race, sex and nativity, for 1892 22
registered in 1892, by counties 23
rate per 1,000 estimated population 23
table of comparison of, in 1891 and 1892 26
ratio of, higher among males than females 29
in Australia, 1882-91 34
in Michigan, during 1892, introduction to tables 102
summary of registration of, for 1892 105
by months, number in Michigan for 1890-92 107
as compared with average, 1882-91 107
by quarter years, number of, in Michigan, for 1890-92 107
as compared with average, 1882-91 107
by months and quarter years, table of, explained 108
by sex, explanation of, table showing 108
rate of, for years 1890-92, table showing 109
per 1,000 population of same sex 109
ratio of males to females 109
by sex and age, table of proportion, 1892 110
and death-rate by ages, value of statistics of 111
by ages, total number of, by years, 1870-92 112
rates per 1,000 population 112
under one year, rate per 1,000 births 113
for 1892, arranged according to month of death and periods of age of decedent 116
relation of, at different periods of age to deaths at all ages 116
by counties, sex, age and months in which deaths occurred for 1892 118
number, by periods of age, sex and months for 1892 120
age, sex and months for 1892 123
average age at, of decedents for 1892, compared with 1890-91 143
by nativity 143
relation of still-births to all deaths, 1890-92 144
average relation for 10 years, 1882-91 144
of infants under one year, number of 143
distribution of, by months, and proportion to births 143
percentage of still-births to total 144
by sex, months and age in months, and month of birth 144
greater than for any other period 146
in 1891-92 of births of 1891, by sex, months of birth, and percentage to total births 147, 148
under one month compared by month and sex with births, 1892 149
number of, by color and sex, for state and by counties, 1892, still-births included 150
number of, by nativity of decedents, for 1890-92 153
average for 10 years, 1882-91 153
nativity of, by numbers and by sex, for state and counties, explanation of table 153
rate of, by nativity and age 156
comparison of, 1892, with estimated population, by nativity and age, showing rates per 1,000, still-births excluded 157

DEATHS—*Continued:*
number of, by age-periods ... 157
foreign-born and native-born ... 157
reported as not occurring in certain townships ... 157
supervisors neglected to enumerate in certain townships ... 157
list of townships making no return of, 1892 ... 159
causes of, in, 1892, remarks on ... 160
reported from specified causes, report deficient ... 160
causes of, share in deficiency of enumeration ... 160
report of each should be increased 60 per cent ... 160
statements of, not based on death certificates ... 160
important causes of ... 161
summary of registration of causes of, 1892 ... 161
preliminary remarks on tables of causes of ... 162
as to relative number of, by sex, age and month of occurrence ... 162
total number from all causes too low in tables ... 162
from each specified cause ... 162
diseases causing, by sex, months and age, 1892 ... 164
total by months, sex, ages and diseases, 1892 ... 164
disease causing, by counties, 1892 ... 168
total by diseases and counties, 1892 ... 168
diseases causing, by years, 1869-92 ... 176
rates of, by counties, 1892 ... 180
rates shown by geographical divisions ... 180
counties in each division ... 181
number and percentage of, from old age and under 5 years, by geographical divisions ... 182
number and percentage of, 1892, from consumption, pneumonia, influenza, diphtheria, croup, scarlet fever, typhoid fever, diarrheal diseases, by geographical divisions ... 183
discussion of tables relating to causes of death, 1892 ... 184
Dr. Farr's system of nomenclature and classification unsatisfactory ... 184
proposed classification of diseases returned as causes of death ... 186
nomenclature and classification of causes of death employed in this report ... 187
important diseases returned as causes of death ... 188
total from all causes, 1892 ... 188
from each cause specified ... 188
rate of, for 1892, lowest since 1886 ... 188
returns of, in state, deficient ... 188
cannot be directly compared with other states ... 188
returns of, by years, in state, may be compared by diseases ... 189
number of, in January, 1892, exceeded any other month ... 189
diseases causing ... 189
total from specified diseases, 1892 ... 189
from dangerous communicable diseases ... 189
from consumption, number and rates of, by counties, 5-year period, 1888-92 ... 191
by years, 1869-92 ... 192
in certain states, show increase during prevalence of influenza ... 193
rates higher in eastern than western states ... 193
decreasing in eastern states ... 193
remaining constant in western states ... 193
from tubercular diseases, 1892 ... 193
from diphtheria and croup, comparison and discussion ... 193
number and rates of, by counties, 5-year period, 1888-92 ... 195
from erysipelas and discussion of ... 196
from puerperal fever and discussion of ... 196
from scarlet fever and discussion of ... 196
rates of, from, 1869-92 ... 196
from typhoid, typho-malarial and typhus fever, discussion of ... 196
rates of, from typhoid fever, 1869-92 ... 197
in England rate decreasing ... 197
from glanders, number of ... 197
from measles, 1892, number and discussion of ... 197
rates of, 1869-92 ... 197
from German measles, discussion of ... 198
from small-pox, discussion of ... 198
rates of, from 1869-92 ... 198
from chicken-pox, discussion of ... 198
from whooping-cough, discussion of ... 198
rates of, from 1869-92 ... 199
from bladder diseases, calculus and cystitis, discussion of ... 199
from bowel diseases, discussion of ... 199
from brain diseases, discussion of ... 200
from cancer and tumor, discussion of ... 200
rates of, 1869-92 ... 200
by sex, and parts of body, 1872-91 ... 201
from childbirth, specified causes ... 202
rates diminishing ... 202
from convulsions, and discussion of ... 202
from diabetes, and discussion of, 1892 ... 202
from dropsy, and discussion of, 1892 ... 202
from fever, bilious fever, catarrhal fever, gastric fever, nervous fever, discussion of ... 202
from malarial fevers, number and discussion of ... 202
from heart diseases, forms of, number and discussion of ... 203
from influenza, number and discussion of ... 203
number of, by months, 1889-92 ... 203
from kidney diseases, number and discussion of ... 203
from liver diseases, number and discussion of ... 203
from lung diseases, number and discussion of ... 204

DEATHS—*Continued:*
from pneumonia, 1883-92, by months, with average for 10-year period 204
from 1869-92, rate of, per 100,000 population 205
from rheumatism, number and discussion of, 1892 205
from septicæmia, number and discussion of, 1892 205
from spine disease, term indefinite, 1892 205
from stomach diseases, number and discussion of, 1892 205
from syphilis, number, discussion and report of, 1892 205
from certain specified but unclassified diseases, number and discussion of 205
rates in Michigan, 1880-92, compared with other states, United States and foreign countries 207
authorities for rates of 208
Michigan rates should be increased at least 60 per cent 208
rates in Michigan, from certain specified causes, by 5-year periods, 1871-90, compared with Massachusetts and England 209
rates of, from consumption, 1880-92, in Michigan, compared with certain other states, the United States and England 211
diphtheria and croup 212
typhoid fever 212
scarlet fever 213
from violence, classification of 213
discussion of, and tables showing number under each class 213
by counties, specifying causes 215
accidental, number of, by sex, 1892 217
from drowning, 1885-93, on great lakes 218
description of important disasters 218
from mining accidents, showing counties and occupations of decedents 218
description of important disasters 219
from poison, number of adults and infants, and drug taken 219
from railroads, classified as to manner of accident and persons killed 220
rates of, decreasing 220
from 1883-93, showing passengers carried, passengers, employés and others killed and injured 221
employés on railroads, classes of, and death-rates, 1892 221
comparison of rates of, by classes of employés 222
caused by horses and vehicles 222
miscellaneous 222
suicide, number of and discussion, 1892 223
by months, years, sex and civil condition, 1874-92 224
by occupation of decedents 225
by nativity 226
means employed, 1892, 1874-92 226
homicide, increasing 228
old classified and alphabetical tables of causes of 227
by months and classes of causes, 1892 227
number and rates of, 1890-2, from all causes 227
from each class of causes 227
average for 10 years, 1882-91 227
number and rate of, 1892, and classes of causes of death, by geographical divisions 228
compared with 1891 and average for 5-year periods, 1871-90 229
by age, sex, causes and months, 1892, and by sex and causes, 1887-92 235
climatic conditions affecting causes of, discussion of 266
See *Climatic Conditions.*
forms of certificates of, used in certain cities of Michigan 310
from important diseases, remarks on rates of 315
rates in certain cities for 1890-92 315
from specified diseases by months for 1890-92, totals in Detroit 316
in Grand Rapids 318
comparison of rates of, from certain important diseases for 1890-92 320
by months, in Wayne and Kent counties, Detroit and Grand Rapids, compared with state 321
from consumption in Detroit and Grand Rapids, compared with state 322
comparison of, in United States, cities for 1892 323
laws relating to registration of 331
circular of instruction relating to collection of statistics by supervisors and assessors 336
relating to the return of by county clerk 339
registration of, in cities. See *Cities.*

DEBILITY—
indefinite form of return 160
number deaths from, 1892 205
by sex, age and months, 1892, and by sex, 1887-92 244

DECEDENTS—
average age of, by occupation, 1892, compared with previous years 270
discussion of, and classification of, by occupations 270
ages of, by classified occupations 272
See *Deaths.*

DENMARK—
marriages per 1,000 population 16
births registered per 1,000 population 17
deaths registered per 1,000 population 18

DETROIT—
population and death-rate of, in 1890 4
fraudulent return of births in 5
See also *Cities* and *Wayne County.*

DEVELOPMENTAL DISEASES—
number of deaths by months from, in 1892 227
number and rate of deaths from, 1890-2, and average, 1882-91 227
in 1892, by geographical divisions, showing population 228
compared with 1891, and 5-year period, 1871-90 ..... 229, 233

DWELLINGS—
number of, by counties, and number persons to each, 1890 ... 30

DIABETES—
deaths from, by months, age and sex, 1892 ... 166, 244
by counties, 1892 ... 170
by years, 1869-92 ... 178
total deaths from, in state, 1892, and discussion of ... 202
death-rate in Michigan, by 5-year periods, 1871-90, compared with Massachusetts and England 210
number and rates of death from, in 1892, as compared with 1891 and average for 5-year period, 1871-90 ... 233
number deaths from, by sex, 1887-92 ... 244
by months, 1890-2, in Detroit ... 316
in Grand Rapids ... 318

DIAGRAMS—
list of ... xxi
acknowledgment to state board of health for certain ... 189

DIARRHEA—
number deaths by months, age, sex, 1892 ... 164
by counties, 1892 ... 168
by years, 1869-92 ... 176
from, and discussion of ... 199
number and rates of death from, 1892, compared with 1891 and average for 5-year period, 1871-90 230
deaths from, by sex, age, months, 1892, and by sex, 1887-92 ... 244
table showing deaths from, by months, for years, 1890, '91, '92, in Detroit ... 316
in Grand Rapids ... 317

DIARRHEAL DISEASES—
number and percentage of deaths from, 1892, by geographical divisions ... 183

DIARRHEA AND DYSENTERY—
death-rate from, in Michigan, by 5-year periods, 1871-90, compared with Massachusetts and England ... 210

DIATHETIC DISEASES—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 229

DIETIC DISEASES—
number and rate of deaths from, 1892 compared with 1891 and average for 5-year periods, 1871-90 ... 229

DIGESTIVE DISEASES—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 229

DIPHTHERIA—
deaths by months, age, sex, 1892 ... 164
by counties, 1892 ... 168
by years, 1869-92 ... 176
number and percentage of deaths from, 1892, by geographical divisions ... 183
most formidable specific infectious disease in state next to tuberculosis ... 194
comparison of deaths from, by counties ... 195
death rates from, in Michigan by 5-year periods, 1871-90, compared with Massachusetts and England ... 209
number and rate of deaths from, 1892, compared with 1891, and average for 5-year periods, 1871-90 ... 230

DIPHTHERIA AND CROUP—
number and proportion of deaths, 1892 ... 161
number deaths from, 1892 ... 193
comparison and discussion of ... 193
classified together by state board of health ... 193
death-rates, 1869-92 ... 194
in Michigan, 1880-92, compared with certain states, United States and England ... 212
deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 245
deaths from, by months, 1890-92, in Detroit ... 316
in Grand Rapids ... 318

DISEASES—
certain, more fully reported than others ... 160
dangerous communicable, given prominence in tables ... 161
impracticable to show meteorological effects on ... 162
causing death, by sex, months and age, 1892 ... 164
by counties, 1892 ... 168
by years, 1869-92 ... 176
discussion of tables relating to causes of death, 1892 ... 184
Dr. Farr's system of nomenclature and classification unsatisfactory ... 184
proposed classification of causes of death ... 186
nomenclature and classification of causes of death, principles to be observed ... 187
total deaths from, 1892 ... 188
causing death in January, 1892 ... 189
total deaths from, specified, 1892 ... 189
total deaths from dangerous communicable, 1892 ... 189
number of deaths from important, by months, for the years 1890-92, in Detroit ... 316
in Grand Rapids ... 318
unclassified, table showing deaths from, by months, for years 1890-92, in Detroit ... 316
in Grand Rapids ... 318
certain important, comparison of death-rates from, in Michigan, Detroit and Grand Rapids, 1890-92 ... 320

NATIVITY—*Continued:*
average age by, of decedents, in 1892, compared with 1890-91 and average, 1882-91 still-births included 148
at death 1892 by, still-births excluded 143
number and proportion of deaths by, 1892 153
compared with 1890-91, with average for 10 years, 1882-91 153
percentage of native born decedents lower in 1892 than 1890-91, and average for 1882-91 153
foreign born higher in 1892 than 1890-91 and average for 1882-91 153
deaths of all, 1892, by sex 154
rates by age and nativity 156
comparison by age and nativity of deaths, 1892, with estimated population; rates per 1,000, still-births excluded 157
of decedents, 1892, and 1874-92, from suicide 226

NEPHRITIS—
number and rate of deaths from, 1892, compared with average for 5-year periods, 1871-90 233
See *Kidneys, Inflammation of.*

NERVOUS DEBILITY—
number deaths from, 1892 205

NEURALGIA—
number deaths from, 1892 205
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 233
deaths from, by sex, age and months, 1892, and by sex, 1887-92 257
of various organs. See *Bowels, Heart, Stomach.*

NEW HAMPSHIRE—
Dr. Farr's nomenclature and classification of causes of death in use in 184

NEW JERSEY—
death-rates in, 1880-92, compared with other states, United States and England 207
from consumption in, 1880-92, compared with Michigan, certain other states, United States and England 211
diphtheria and croup 213
typhoid fever 213
scarlet fever 213

NEW SOUTH WALES—
population and vital statistics of 34

NEW YORK—
death-rates in, 1880-92, compared with other states, United States and foreign countries 207
from consumption, 1880-92, compared with other states, United States and England 211
diphtheria and croup 213
typhoid fever 213
scarlet fever 213

NEW ZEALAND—
population and vital statistics of 34

NICHOLS, HUGH—
authority for information relating to registration of deaths and burial permits in Corunna 288

NILES—
population and death-rate of, in 1890 4
death-rates of, in 1890-91 315

NOMENCLATURE AND CLASSIFICATION OF CAUSES OF DEATH—
system of, used in English registrar-general's reports 184
adopted in several states 184
Dr. Farr's system of, unsatisfactory 184
discussion of, and reasons why 184
in use in several states 184
when using terms of, must not confuse original and later forms 185
registration officers should adopt some uniform system xii, 186
basis of provisional system employed in this report (Tables 69-71) 187
principles followed in preparing same 187
old system used in certain tables of this report (Tables 86-89) 227

NORWAY—
number persons married per 1,000 living population 16
births registered per 1,000 living population 17
deaths registered per 1,000 living population 18

NUTRITION, DISEASES OF—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 229, 234

OCCUPATION—
of suicides, 1892 and 1874-92 225
average age of decedents by, 1892, compared with previous years 270
discussion of, and classification 270
classes of decedents showing high and low average age at death 271
classification, showing age of decedents 272

OHIO—
Dr. Farr's nomenclature and classification of causes of death, in use in 184
death-rates in, 1880-92, compared with other States, United States and foreign countries 207
death-rates from consumption in, 1880-92, compared with certain other states, United States and England 211
diphtheria and croup 213
typhoid fever 213
scarlet fever 213

OLD AGE—
number and percentage of deaths from, by geographical divisions, 1892 ... 182
classed in deaths from developmental causes, by Dr. Farr's system of nomenclature and classification ... 185
not a disease ... 185
term should not be used in death certificates ... 185
number of deaths, from, 1892 ... 206
death-rates from, in Michigan and Massachusetts, by 5-year periods, 1871-90 ... 211
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 234
number of deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 257

ONTARIO—
death-rates in, 1880-92, compared with United States, certain other states and foreign countries ... 207
death-rates from consumption in, 1880-92, compared with Michigan, certain other states, United States and England ... 211
diphtheria and croup ... 213
typhoid fever ... 212
scarlet fever ... 213

OSBORN, DR. C. A.—
authority for information relating to registration of deaths and burial permits in Owosso ... 290

OZONE—
average amount of, day and night, 1892, compared with 1890, '91 and 1877-90 ... 269
See *Climatic Conditions.*

PARALYSIS—
number deaths by months, age and sex, 1892 ... 166
by counties, 1892 ... 170
by years, 1869-92 ... 175
number deaths from, 1892, and discussion of ... 200
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 231
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 257
of various organs. See *Bladder, Bowels, Brain, Heart, Spine, Stomach, Throat,* in Table 90.

PARASITIC DISEASES—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 229

PARENTS—
of children born in 1892, nativity of ... 37
comparison of births to foreign and native born parents ... 39, 40
proportion of male to female children of ... 40
of children born in 1892, nativity of ... 54
in 1890, '91 and '92, with average for 10 years ... 55
counties showing predominance of native and foreign born ... 56
comparison of births to foreign born with native born ... 56
of children born in 1892, number and nativity of by counties ... 57
of still-born, twins and illegitimate children, 1892, nativity of ... 70
native, foreign and mixed nativity, proportion of plural births, 1888-92 ... 71
mothers of illegitimate children, ratio of nativity of ... 72
See *Nativity.*

PENALTY—
for violation of marriage law ... 80

PERICARDITIS. See *Heart.*

PERITONITIS—
number deaths from, by months, age and sex, 1892 ... 164
by counties, 1892 ... 168
by years, 1869-92 ... 176
number deaths from, 1892, and discussion of ... 199
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 232
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 258
number deaths from, by months, 1890-92, in Detroit ... 316
in Grand Rapids ... 318
tubercular, number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 258

PHTHISIS. See *Consumption.*

PLEURISY—
number deaths by months, age and sex, 1892 ... 166
by counties, 1892 ... 170
by years, 1869-92 ... 178
number deaths from, 1892, and discussion of ... 204
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 232
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 258

PLEURO-PNEUMONIA—
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 258

PNEUMONIA—
number and proportion of deaths from, 1892 ... 161
number deaths by months, age and sex, 1892 ... 166
by counties, 1892 ... 170
by years, 1869-92 ... 178
number and percentage of deaths from, 1892, by geographical divisions ... 183
important as a cause of death in January, 1892 ... 189
number deaths from, 1888-92, by months showing 10-year average ... 204

PNEUMONIA—*Continued:*
number deaths from, 1892, and discussion of 204
effect of influenza on 204
death-rate from, 1869-92 205
death-rates from, in Michigan, by 5-year periods, 1871-90, compared with Massachusetts and England 209
number and death-rate from, 1892, compared with 1891 and average for 5-year periods, 1871-90 232
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 258
diseases which should be included under 265
death-rate from, per 100,000 population, 1890-92, as compared with other diseases 320

POISON—
number accidental deaths from, 1892, by counties 215
showing drug taken and number of adult and infant decedents 219
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 234
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 236

POPULATION—
estimate of, for 1892, how calculated 2, 180
number persons married, per 1,000 of 2
births reported per 1,000 of 2
deaths reported per 1,000 of 2
natural increase of 2
estimate of births and deaths per 1,000 of 3
synopsis of tables, showing relation of vital statistics to 5
of Wayne county and Detroit, 1880-92 8
rate of births, marriages and deaths per 1,000 of 8
comparison of, relative to ratio of births, marriages and deaths 9
per cent as shown by group of states compared with Michigan 9
by different decades, increase and per cent of 10
estimate of, for inter-census years, and manner of making 11
geometrical ratio of increase, as shown by different decades 12
population, 1887-92, with number marriages, births and deaths registered each year 13
rate of marriages, births and deaths per 1,000 population 13
rate per 1,000 population of births and deaths, and natural increase 14
race, color and nativity of births, deaths and marriages, 1892, with population 1890 22
rates of marriages, births and deaths, 1892, per 1,000 estimated population 23
density of, effect on death-rate 29
increase of, by counties, 1880-90 30
number males and females, native and foreign-born, 1890 30
density of, to square mile, 1890 30
chief products and industries of 1890 30
number of, to each dwelling, 1890 30
of Australia, 1891 34
of townships reporting no births, 1892 74
no births returned 75
from 1870-92, inclusively, at each period of age 112
deaths and death-rates at each period of age 112
deaths by per cent at specified ages 112
ratio of deaths under one year to total living, births each year 113
comparisons of age-constitutions of, as shown by censuses, 1870-90 114
decennial per cent of increases of, at certain periods of age 114
changes in, by German, Scandinavian and English immigration and importance of 156
estimate of 1892 for comparisons of death-rates by nativity 156
of townships reporting no deaths, 1892 ..... 157, 158
no deaths returned 157
of cities, 1884, 1890, 1894 282

PREMATURE BIRTHS. See *Births.*

PRUDDEN, M. D., T. MITCHELL—
remarks of, on consumption 190

PRUSSIA—
number persons married per 1,000 living population 16
births registered per 1,000 living population 17
deaths registered per 1,000 living population 18

PUERPERAL CONVULSIONS—
number deaths from, 1892 202

PUERPERAL FEVER—
number deaths from, by months and age, 1892 164
by counties 168
by years, 1869-92 176
in 1892, and discussion of 196
death-rate from, in Michigan, by 5-year periods, 1871-90, compared with Massachusetts and England 210
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 230
number deaths from, by age and months, 1892, and by years, 1887-92 248
by months, 1890-92, in Detroit 316
in Grand Rapids 318

PUERPERAL MANIA—
number deaths from, 1892 202
by age and months, 1892, and by years, 1887-92 242

QUEENSLAND—
population and vital statistics of 4

QUINSY—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 230
See *Tonsilitis.*

RATIOS—
note on expression of ... xxii

RACES—
population and vital statistics by color and race for state ... 22
comparison of death-rates of, not advisable ... 152
See *Color.*

RACHITIS—
number of deaths from, 1892 ... 206
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 230
number of deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 259

RAILROAD ACCIDENTS—
number of deaths from, by counties, 1892 ... 215
number of deaths from, 1892 ... 220
report of railroad commissioner more accurate ... 220
deaths and injuries on railroad, showing manner of accident, passengers and employés killed and injured, 1891-92 ... 220
death-rates from, decreasing ... 220
deaths and injuries on railroads, showing passengers carried, passengers, employés and others killed and injured, 1883-93 ... 221
deaths and injuries of employés on railroads, showing class and death-rates, 1892 ... 221
comparison of death-rates from, by classes of employés ... 222
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 234
number of deaths from, by sex, age and months, 1892, and by sex, 1887-90 ... 236

RAIN AND MELTED SNOW—
inches of, by year and months, 1892, compared with 1890-91 and 1877-90 ... 269
See *Climatic Conditions.*

RANNEY, M. D., GEORGE E.—
registration report prepared by, 1868 ... 333

REGISTRATION—
of births, local, letter on by Dr. W. A. Wilson ... 333
laws relating to, of births and deaths ... 331

REGISTRATION LAW OF MICHIGAN—
defects of, in returns of births and deaths ... 1, 19, 28, 36, 42
as affecting statistical conclusions ... 160, 162, 188, 211, 220, 280, 284, 315

REMITTENT FEVER—
number of deaths from, 1892 ... 202
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 230
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 247

RESPIRATORY DISEASES—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 229, 232

RHEUMATISM—
number of deaths from, by months, age and sex, 1892 ... 166
by counties, 1892 ... 170
by years, 1869-92 ... 178
number of deaths from, 1892, and discussion of ... 205
inflammatory ... 205
death-rate from, in Michigan by 5-year periods, 1871-90, compared with Massachusetts and England ... 210
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 230
number of deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 259
inflammatory ... 259
sciatic ... 259
number of deaths from, by months, 1890-92, in Detroit ... 316
in Grand Rapids ... 318

RHEUMATISM OF HEART. See *Heart.*

RHODE ISLAND—
number persons married per 1,000 living population ... 16
deaths registered per 1,000 living population ... 18
Dr. Farr's nomenclature and classification of causes of death with modifications from the later classification in use in ... 184
death-rates in, 1890-92, compared with certain other states, United States and foreign countries ... 207
death-rates from consumption in, 1890-92, compared with certain other states, United States and England ... 211
diphtheria and croup ... 212
typhoid fever ... 212
scarlet fever ... 213

ROSENBERG, DR. H. L.—
authority for information relating to registration of death and burial permits in Menominee. 290

RUDOLPHI, ARTHUR E.—
authority for information relating to registration of deaths and burial permits in Dowagiac. 288

SALPINGITIS—
number deaths from, 1892 ... 206
by sex, age and months, 1892, and by years, 1887-92 ... 259
SCALDS. See *Burns and Scalds.*
SCARLET FEVER—
number and proportion of deaths from, 1892 ... 161
number deaths from, by months, age and sex, 1892 ... 164
by counties, 1892 ... 168
by years, 1869-92 ... 176
number and per cent of deaths from, 1892, by geographical divisions ... 183
number deaths from, 1892, and discussion of ... 196
death-rates from, 1869-92 ... 198
in Michigan by 5-year periods, 1871-90, compared with Massachusetts and England ... 209
1890-92, compared with other states, United States and England ... 213
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 230
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 248
by months, 1890-92, in Detroit ... 316
in Grand Rapids ... 318
per 100,000 population, 1890-92, as enumerated for Michigan and registered for Detroit and Grand Rapids ... 320
SCIATICA—
number deaths from, 1892, and discussion of ... 205
SCOTLAND—
number persons married per 1,000 living population ... 16
births registered per 1,000 living population ... 17
deaths registered per 1,000 living population ... 18
SCROFULA—
number deaths from, by counties, 1892 ... 168
in 1892 ... 193
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 231
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 250
SEAMAN, D. S.—
authority for information as to registration of deaths and burial permits in Adrian ... 288
SEPTICÆMIA—
number deaths from, by sex, age and months, 1892 ... 166
by counties, 1892 ... 170
by years, 1869-92 ... 178
number deaths from, 1892, and discussion of ... 205
formerly classed with erysipelas ... 205
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 230
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 260
by months, 1890-92, in Detroit ... 316
in Grand Rapids ... 318
SEXES—
tendency to equalization of ... 29
number marriages, births and deaths, 1892, by color, nativity and sex ... 22
relative number of, by counties, 1890 ... 30
of births in 1892 ... 37
number births by sex, months and counties, 1892 ... 45
males born to 100 females, by counties, 1892 ... 45
number still-births, twins and illegitimates, 1892, by months and sex ... 69
number deaths by, for 1880-92 ... 109
in 1892, by sex and age in periods of years ... 130
in 1892, by sex and months at all ages ... 133
in 1892, under one year, by months and sex, showing age in months and month and year of birth, still-births included ... 144
under one year, 1891-92, by sex and months of birth, giving per cent of total births, still-births included ... 147
relation, by months and sex, of deaths under one month to births, 1892, still-births included ... 149
of decedents, exhibited by color and sex, for state and counties, still-births included ... 150
nativity of decedents, by sex, for state and counties ... 154
number deaths from cancer, 1892 and 1872-91, by sex and parts of body ... 201
of suicides, 1874-92, by months, years, sex and civil condition ... 224
of decedents, showing number deaths by age, sex, causes and months, 1892, and by sex and causes, 1887-92 ... 235
SHINE, JOHN W.—
authority for information as to registration of deaths and burial permits in Sault Ste. Marie ... 290
SIPP, GEORGE H.—
authority for information as to registration of deaths and burial permits in Holland ... 289
SKIN—
diseases of, number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 260
SMALL-POX—
number deaths from, by months, age and sex, 1892 ... 164
by counties, 1892 ... 168
by years, 1869-92 ... 176
in 1892, and discussion of ... 196
death-rates from, 1869-92 ... 198
in Michigan, by 5-year periods, 1871-90, compared with Massachusetts and England ... 209
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 230
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 260
by months, 1890-92, in Detroit ... 316
in Grand Rapids ... 318

SOUTH AUSTRALIA—
population and vital statistics of 34
SPINA BIFIDA—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 234
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 260
SPINAL FEVER—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 232
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 248
SPINE—
diseases of, number deaths by months, age and sex, 1892 166
number deaths by counties, 1892 170
by years, 1869-92 178
in 1892 205
term indefinite 205
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 232
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 260
by months, 1890-92, in Detroit 316
in Grand Rapids 318
SPLEEN—
disease of, number deaths from, 1892 206
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 233
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 260
SPOTTED FEVER. See *Meningitis*.
STATE BOARD OF HEALTH—
efforts of, to restrict certain diseases 161
list of "dangerous, communicable diseases" as defined by, used as basis of classification in this report 189
includes consumption in list of diseases dangerous to the public health 190
action on croup 198
credit for meteorological data 266
for certain diagrams 189
STATES—
vital statistics should be compared by, and reason 206
STEBBINS, E S.—
authority for information as to registration of deaths, and burial permits in Stanton 291
STILL-BIRTHS. See *Births*.
STOMACH—
cancer of, number deaths from, 1892 200
deaths from, not classified among stomach diseases 203
diseases of, number deaths by months, age and sex, 1892 166
number deaths by counties, 1892 170
number deaths by years, 1869-92 178
in 1892 205
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 233
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 261
by months, 1890-92, in Detroit 316
in Grand Rapids 318
hemorrhage of 261
inflammation of, number deaths from, by sex, age and months, 1892 166
number deaths by counties, 1892 170
by years, 1869-92 178
in 1892 205
ulceration of, number deaths from, 1892 205
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 263
STRICTURE—
number deaths from, 1892 206
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 230
number deaths from, by sex, age and months, 1892 and by sex, 1887-92 262
STRONG, CHAUNCEY—
authority for information as to registration of deaths and burial permits in Kalamazoo 289
SUFFOCATION—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 234
SUICIDE—
death-rate from, in Michigan by 5-year periods, 1871-90, compared with Massachusetts and England 210
number deaths from, 1892, by causes 214
by counties, 1892 215
death-rate increasing and returns inaccurate 223
number deaths from, 1874-92, by months, years, sex and civil condition 224
by occupation of decedents 225
number deaths from, 1892 and 1874-92, showing means employed 226
nativity of decedents 226
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ..... 229, 234
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 262

SUNSTROKE. See *Heat and Sunstroke.*

SUPERVISORS—
neglect of, to enumerate deaths and report that none occur ... 157
failure of, to enumerate all deaths ... 160
enumeration of causes of death by, imperfect ... 160
should be made from death certificate ... 160
circular of instruction to, as to collection of births and deaths ... 336

SWEDEN—
number persons married per 1,000 living population ... 16
births registered per 1,000 living population ... 17
deaths registered per 1,000 living population ... 18

SWITZERLAND—
number persons married per 1,000 living population ... 16
births registered per 1,000 living population ... 17
deaths registered per 1,000 living population ... 18

SYPHILIS—
number deaths from, by sex, age and months, 1892 ... 166
by counties, 1892 ... 170
by years, 1869-92 ... 178
in 1892, and discussion of ... 205
probably not fully reported ... 205
probable cause of many still-births ... 205
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 230
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 262
by months, 1890-92, in Detroit ... 316
in Grand Rapids ... 318

TABLES—
list of, with contents ... xv

TABES MESENTERICA—
number deaths by months, age and sex, 1892 ... 164
by counties, 1892 ... 168
in 1892 ... 193

TASMANIA—
population and vital statistics of ... 34

TEED, A. J.—
authority for information relating to registration of deaths and burial permits in Cadillac ... 287

TEETHING—
number deaths from, 1892 ... 206
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 234
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 263

TEMPERATURE—
average by year and months, 1892, compared with 1891, '92 and average for 1877-90 ... 266
average daily range of, same time ... 267
comparisons of extremes and range of, 1892, with average for 1877-90 ... 267
extremes and range of, for each year, 1885-91 ... 267
See *Climatic Conditions.*

TETANUS—
number deaths from, 1892 ... 206
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 231
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 263

THRUSH—
number deaths from, 1892 ... 206
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 231
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 263

TONSILITIS—
number deaths from, 1892 ... 206
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 263

TOWNSHIPS—
reporting no births for 1892 ... 74
population of ... 74
reporting no deaths ... 157
aggregate population greater than 1891 ... 157
supervisors neglecting to enumerate them ... 157
no reports from delinquent ... 157
marked improvement over 1891 ... 157
list of, reporting no deaths for 1892 ... 158
showing population for 1890 ... 158

TRICHINIASIS—
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 263

TRIPLETS—
table showing number of, returned, 1883-92, with averages ... 69

TRISMUS NEONATORUM—
number deaths from, 1892 ... 206
by sex, age and months, 1892, and by sex, 1887-92 ... 263

TUBERCULAR DISEASES—
other than consumption, number deaths, by months, age and sex, 1892 ... 164
deaths by counties, 1892 ... 168
deaths by years, 1869-92 ... 176
deaths from, 1892 ... 198
some deaths from unknown causes should be classed with ... 198
table showing deaths from, by months, 1890-92, in Detroit ... 316
in Grand Rapids ... 318
number and rate of deaths from, 1892, compared with 1891 and average for 1871-90 ... 229
See *Consumption*.
TUMOR—
number deaths by months, age and sex, 1892 ... 166
by counties, 1892 ... 170
by years, 1869-92 ... 178
deaths from cancer frequently reported as ... 200
number deaths from, in 1892 and discussion of ... 200
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 268
table showing deaths from, by months, for years 1890-92, in Detroit ... 316
in Grand Rapids ... 318
table showing death-rate from cancer and per 100,000 population, for years 1890-92, as enumerated for State and registered for Detroit and Grand Rapids ... 320
TWINS—
number born in 1892 ... 67
table showing pairs of, born in 1892, by counties ... 66
per cent of, to total births returned in 1889-92, and average 1882-91 ... 68
number pairs of, and triplets returned 1882-92, with averages ... 69
number of, born in 1892 ... 70
proportion of males to females among children born alive, still-births and illegitimates, 1891 and 1892 ... 71
average for 10 years, 1882-91 ... 71
number of mothers of, nativity and color for years, 1890-92 ... 72
TYPHO-MALARIAL FEVER—
number deaths by years, 1869-92 ... 176
1892 and discussion of ... 196
number and rate of deaths from, 1892, compared with 1891 and average for 1871-90 ... 230
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 248
TYPHOID FEVER—
number and proportion of deaths from, 1892 ... 161
number deaths by months, age and sex, 1892 ... 164
by counties, 1892 ... 168
by years, 1869-92 ... 176
number and percentage of deaths from, 1892, by geographical divisions ... 188
death-rates from, 1869-92 ... 197
death-rates higher in western than eastern states ... 197
discussion of ... 197
death-rates from, decreasing in England ... 197
in Michigan, 1871-90, compared with Massachusetts and England ... 209
in Michigan, 1880-92, compared with certain other states, United States and England ... 212
number and rate of deaths from, 1892, compared with 1891 and average for 1871-90 ... 230
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 248
table showing deaths from, by months, years 1890-92, in Detroit ... 316
in Grand Rapids ... 318
death-rate per 100,000 population for 1890-92, as compared with other diseases ... 320
TYPHOID-PNEUMONIA—
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 258
See *Pneumonia*.
TYPHUS FEVER—
number deaths from, by sex, months and age, 1892 ... 164
by counties, 1892 ... 168
by years, 1869-92 ... 176
returns of, intended for typhoid ... 196
number and rate of deaths from, 1892, compared with 1891 and average for 1871-90 ... 230
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 ... 248
ULCER—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 ... 238
by sex, age, months, 1892, and by sex, 1887-92 ... 264
of various organs. See *Bowels, Stomach*, in Table 90.
UNCLASSIFIED DISEASES—
number deaths from, 1892 ... 205
UNITED KINGDOM—
number persons married per 1,000 living population ... 16
of births registered per 1,000 living population ... 17
of deaths registered per 1,000 living population ... 18
death-rate in, 1880-92, compared with other foreign countries and certain states ... 207
UNITED STATES—
number births registered per 1,000 living population ... 17
deaths registered per 1,000 living population ... 18
diminishing birth-rate ... 40
compared with European countries ... 41
death-rate in, 1880-92, compared with certain foreign countries and states ... 207
from consumption in, 1880-92, compared with Michigan, certain other states and England ... 211
from diphtheria and croup ... 212
from typhoid fever ... 212
from scarlet fever ... 213

NATIVITY—*Continued:*
average age by, of decedents, in 1892, compared with 1890-91 and average, 1882-91 still-births included 148
at death 1892 by, still-births excluded 143
number and proportion of deaths by, 1892 152
compared with 1890-91, with average for 10 years, 1882-91 153
percentage of native born decedents lower in 1892 than 1890-91, and average for 1882-91 155
foreign born higher in 1892 than 1890-91 and average for 1882-91 153
deaths of all, 1892, by sex 154
rates by age and nativity 156
comparison by age and nativity of deaths, 1892, with estimated population; rates per 1,000, still-births excluded 157
of decedents, 1892, and 1874-92, from suicide 226

NEPHRITIS—
number and rate of deaths from, 1892, compared with average for 5-year periods, 1871-90 232
See *Kidneys, Inflammation of.*

NERVOUS DEBILITY—
number deaths from, 1892 205

NEURALGIA—
number deaths from, 1892 205
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 232
deaths from, by sex, age and months, 1892, and by sex, 1887-92 257
of various organs. See *Bowels, Heart, Stomach.*

NEW HAMPSHIRE—
Dr. Farr's nomenclature and classification of causes of death in use in 184

NEW JERSEY—
death-rates in, 1880-92, compared with other states, United States and England 207
from consumption in, 1880-92, compared with Michigan, certain other states, United States and England 211
diphtheria and croup 212
typhoid fever 213
scarlet fever 213

NEW SOUTH WALES—
population and vital statistics of 34

NEW YORK—
death-rates in, 1880-92, compared with other states, United States and foreign countries 207
from consumption, 1880-92, compared with other states, United States and England 211
diphtheria and croup 212
typhoid fever 213
scarlet fever 213

NEW ZEALAND—
population and vital statistics of 34

NICHOLS, HUGH—
authority for information relating to registration of deaths and burial permits in Corunna 298

NILES—
population and death-rate of, in 1890 4
death-rates of, in 1890-91 315

NOMENCLATURE AND CLASSIFICATION OF CAUSES OF DEATH—
system of, used in English registrar-general's reports 184
adopted in several states 184
Dr. Farr's system of, unsatisfactory 184
discussion of, and reasons why 184
in use in several states 184
when using terms of, must not confuse original and later forms 185
registration officers should adopt some uniform system xii, 186
basis of provisional system employed in this report (Tables 69-71) 187
principles followed in preparing same 187
old system used in certain tables of this report (Tables 86-89) 227

NORWAY—
number persons married per 1,000 living population 16
births registered per 1,000 living population 17
deaths registered per 1,000 living population 18

NUTRITION, DISEASES OF—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 229, 234

OCCUPATION—
of suicides, 1892 and 1874-92 225
average age of decedents by, 1892, compared with previous years 270
discussion of, and classification 270
classes of decedents showing high and low average age at death 271
classification, showing age of decedents 272

OHIO—
Dr. Farr's nomenclature and classification of causes of death, in use in 184
death-rates in, 1880-92, compared with other States, United States and foreign countries 207
death-rates from consumption in, 1880-92, compared with certain other states, United States and England 211
diphtheria and croup 212
typhoid fever 213
scarlet fever 213

OLD AGE—
number and percentage of deaths from, by geographical divisions, 1892 182
classed in deaths from developmental causes, by Dr. Farr's system of nomenclature and classification 185
not a disease 185
term should not be used in death certificates 185
number of deaths, from, 1892 206
death-rates from, in Michigan and Massachusetts, by 5-year periods, 1871-90 211
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 234
number of deaths from, by sex, age and months, 1892, and by sex, 1887-92 257

ONTARIO—
death-rates in, 1880-92, compared with United States, certain other states and foreign countries 207
death-rates from consumption in, 1880-92, compared with Michigan, certain other states, United States and England 211
diphtheria and croup 212
typhoid fever 212
scarlet fever 213

OSBORN, DR. C. A.—
authority for information relating to registration of deaths and burial permits in Owosso 280

OZONE—
average amount of, day and night, 1892, compared with 1890, '91 and 1877-90 269
See *Climatic Conditions.*

PARALYSIS—
number deaths by months, age and sex, 1892 166
by counties, 1892 170
by years, 1869-92 178
number deaths from, 1892, and discussion of 200
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 231
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 257
of various organs. See *Bladder, Bowels, Brain, Heart, Spine, Stomach, Throat,* in Table 90.

PARASITIC DISEASES—
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 229

PARENTS—
of children born in 1892, nativity of 37
comparison of births to foreign and native born parents 39, 40
proportion of male to female children of 40
of children born in 1892, nativity of 54
in 1890, '91 and '92, with average for 10 years 55
counties showing predominance of native and foreign born 56
comparison of births to foreign born with native born 56
of children born in 1892, number and nativity of by counties 57
of still-born, twins and illegitimate children, 1892, nativity of 70
native, foreign and mixed nativity, proportion of plural births, 1883-92 71
mothers of illegitimate children, ratio of nativity of 72
See *Nativity.*

PENALTY—
for violation of marriage law 80

PERICARDITIS. See *Heart.*

PERITONITIS—
number deaths from, by months, age and sex, 1892 164
by counties, 1892 168
by years, 1869-92 176
number deaths from, 1892, and discussion of 199
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 232
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 258
number deaths from, by months, 1890-92, in Detroit 316
in Grand Rapids 318
tubercular, number deaths from, by sex, age and months, 1892, and by sex, 1887-92 258

PHTHISIS. See *Consumption.*

PLEURISY—
number deaths by months, age and sex, 1892 166
by counties, 1892 170
by years, 1869-92 178
number deaths from, 1892, and discussion of 204
number and rate of deaths from, 1892, compared with 1891 and average for 5-year periods, 1871-90 232
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 258

PLEURO-PNEUMONIA—
number deaths from, by sex, age and months, 1892, and by sex, 1887-92 258

PNEUMONIA—
number and proportion of deaths from, 1892 161
number deaths by months, age and sex, 1892 166
by counties, 1892 170
by years, 1869-92 178
number and percentage of deaths from, 1892, by geographical divisions 182
important as a cause of death in January, 1892 189
number deaths from, 1883-92, by months showing 10-year average 204



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